NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

A PARAMETRIC COST MODEL FOR ESTIMATING OPERATING AND SUPPORT COSTS OF U.S. NAVY AIRCRAFT

by

Mustafa Donmez

December 2000

Thesis Advisor: Timothy P. Anderson
Second Reader: Samuel E. Buttrey

Form SF298 Citation Data

Report Date ("DD MON YYYY")	Report Type	Dates Covered (from... to) ("DD MON YYYY")
15 12 2000	N/A	

Title and Subtitle A PARAMETRIC COST MODEL FOR ESTIMATING OPERATING AND SUPPORT COSTS OF U.S. NAVY AIRCRAFT	**Contract or Grant Number**
	Program Element Number
Authors	**Project Number**
	Task Number
	Work Unit Number
Performing Organization Name(s) and Address(es) Naval Postgraduate School Monterey, Ca 93943-5114	**Performing Organization Number(s)**
Sponsoring/Monitoring Agency Name(s) and Address(es)	**Monitoring Agency Acronym**
	Monitoring Agency Report Number(s)

Distribution/Availability Statement
Approved for public release, distribution unlimited

Supplementary Notes

Abstract
This study provides parametric O&S cost models for future US Navy aircraft acquisition programs based on physical and performance parameters. The proposed parametric cost models provide decision makers with a tool for developing rough-order-of-magnitude annual O&S cost estimates for future US Navy aircraft acquisition programs. The historic aircraft cost data was provided by the Naval Center for Cost Analysis (NCCA) in a spreadsheet format and the data were extracted from the Navy Visibility and Maintenance of Operating and Support Cost (VAMOSC) data warehouse. After validating the assumption that the average annual O&S cost for any aircraft type/model/series is constant from year to year, cost estimating relationships are developed. The first model developed is based on multivariate regression. In this case, forward stepwise regression was used to find the model with the best fit. Since the multivariate regression model turns out to be impractical, having more than 30 variables in the equation, a tree-based model is presented as an alternative. Additionally, single variable cost estimating relationships are formulated based on the physical and performance parameters length, weight, and thrust.

Subject Terms
Tree Models Operating and Support Cost Regression Aircraft Cost Estimation

Document Classification unclassified	**Classification of SF298** unclassified
Classification of Abstract unclassified	**Limitation of Abstract** unlimited
Number of Pages 200	

A PARAMETRIC COST MODEL FOR ESTIMATING OPERATING AND SUPPORT COSTS OF U.S. NAVY AIRCRAFT

Mustafa Donmez, First Lieutenant, Turkish Army
B.S., Turkish Military Academy, 1994
Master of Science in Operations Research-December 2000
Advisor: Timothy P. Anderson, Department of Operations Research
Second Reader: Samuel E. Buttrey, Department of Operations Research

This study provides parametric O&S cost models for future US Navy aircraft acquisition programs based on physical and performance parameters. The proposed parametric cost models provide decision makers with a tool for developing rough-order-of-magnitude annual O&S cost estimates for future US Navy aircraft acquisition programs. The historic aircraft cost data was provided by the Naval Center for Cost Analysis (NCCA) in a spreadsheet format and the data were extracted from the Navy Visibility and Maintenance of Operating and Support Cost (VAMOSC) data warehouse. After validating the assumption that the average annual O&S cost for any aircraft type/model/series is constant from year to year, cost estimating relationships are developed. The first model developed is based on multivariate regression. In this case, forward stepwise regression was used to find the model with the best fit. Since the multivariate regression model turns out to be impractical, having more than 30 variables in the equation, a tree-based model is presented as an alternative. Additionally, single variable cost estimating relationships are formulated based on the physical and performance parameters *length*, *weight*, and *thrust.*

DoD KEY TECHNOLOGY AREA: Cost Analysis

KEYWORDS: Cost Estimation, Operating and Support Cost, Aircraft, Regression, Tree Models

REPORT DOCUMENTATION PAGE	*Form Approved OMB No. 0704-0188*

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.

1. AGENCY USE ONLY ***(Leave blank)***	**2. REPORT DATE** December 2000	**3. REPORT TYPE AND DATES COVERED** Master's Thesis

4. TITLE AND SUBTITLE: A Parametric Cost Model for Estimating Operating and Support Costs of U.S. Navy Aircraft	**5. FUNDING NUMBERS**
6. AUTHOR (S): Donmez, Mustafa	
7. PERFORMING ORGANIZATION NAME (S) AND ADDRESS (ES) Naval Postgraduate School Monterey, CA 93943-5000	**8. PERFORMING ORGANIZATION REPORT NUMBER**
9. SPONSORING / MONITORING AGENCY NAME (S) AND ADDRESS (ES) N/A	**10. SPONSORING / MONITORING AGENCY REPORT NUMBER**

11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.

12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited	**12b. DISTRIBUTION CODE** A

13. ABSTRACT *(maximum 200 words)*

This study provides parametric O&S cost models for future US Navy aircraft acquisition programs based on physical and performance parameters. The proposed parametric cost models provide decision makers with a tool for developing rough-order-of-magnitude annual O&S cost estimates for future US Navy aircraft acquisition programs. The historic aircraft cost data was provided by the Naval Center for Cost Analysis (NCCA) in a spreadsheet format and the data were extracted from the Navy Visibility and Maintenance of Operating and Support Cost (VAMOSC) data warehouse. After validating the assumption that the average annual O&S cost for any aircraft type/model/series is constant from year to year, cost estimating relationships are developed. The first model developed is based on multivariate regression. In this case, forward stepwise regression was used to find the model with the best fit. Since the multivariate regression model turns out to be impractical, having more than 30 variables in the equation, a tree-based model is presented as an alternative. Additionally, single variable cost estimating relationships are formulated based on the physical and performance parameters *length*, *weight*, and *thrust*.

14. SUBJECT TERMS Cost Estimating, Operating and Support Cost, Aircraft, Regression, Tree Models	**15. NUMBER OF PAGES**
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	**18. SECURITY CLASSIFICATION OF THIS PAGE**	**19. SECURITY CLASSIFICATION OF ABSTRACT**	**20. LIMITATION OF ABSTRACT**
Unclassified	Unclassified	Unclassified	UL

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. 239-18

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release; distribution is unlimited

A PARAMETRIC COST MODEL FOR ESTIMATING OPERATING AND SUPPORT COSTS OF U.S. NAVY AIRCRAFT

Mustafa Donmez
First Lieutenant, Turkish Army
B.S., Turkish Military Academy, 1994

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN OPERATIONS RESEARCH

from the

NAVAL POSTGRADUATE SCHOOL
December 2000

Author: ______________________________
Mustafa Donmez

Approved by: ______________________________
Timothy P. Anderson, Thesis Advisor

____
Samuel E. Buttrey, Second Reader

____
James N. Eagle, Chairman
Department of Operations Research

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

This study provides parametric O&S cost models for future US Navy aircraft acquisition programs based on physical and performance parameters. The proposed parametric cost models provide decision makers with a tool for developing rough-order-of-magnitude annual O&S cost estimates for future US Navy aircraft acquisition programs. The historic aircraft cost data was provided by the Naval Center for Cost Analysis (NCCA) in a spreadsheet format and the data were extracted from the Navy Visibility and Maintenance of Operating and Support Cost (VAMOSC) data warehouse. After validating the assumption that the average annual O&S cost for any aircraft type/model/series is constant from year to year, cost estimating relationships are developed. The first model developed is based on multivariate regression. In this case, forward stepwise regression was used to find the model with the best fit. Since the multivariate regression model turns out to be impractical, having more than 30 variables in the equation, a tree-based model is presented as an alternative. Additionally, single variable cost estimating relationships are formulated based on the physical and performance parameters *length*, *weight*, and *thrust*.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF FIGURES

LIST OF TABLES

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF ACRONMYS AND ABBREVIATIONS

ATMSR	Aircraft Type/Model/Series Report
CER	Cost Estimating Relationship
CI	Confidence Interval
CV	Coefficient of Variation
DoD	Department of Defense
FRS	Fleet Readiness Squadron
FY	Fiscal Year
LANFLT	Atlantic Fleet
LCC	Life-Cycle Cost
LCDR	Lieutenant Commander
MSE	Mean Square Error
MISC	Miscellaneous
NAVAIR	Naval Air Systems Command
NAVEUR	Naval Forces Europe
NCCA	Naval Center for Cost Analysis
NET	Naval Education and Training
O&S	Operating and Support
OLS	Ordinary Least Square
OSD	Office of the Secretary of Defense
CAIG	Cost Analysis Improvement Group
PACFLT	Pacific Fleet
SE	Standard Error
TMS	Type, Model, Series
VAMOSC	Visibility and Maintenance of Operating and Support Costs
WLS	Weighted Ordinary Least Squares

THIS PAGE INTENTIONALLY LEFT BLANK

EXECUTIVE SUMMARY

Approximately 64% of the life cycle cost (LCC) of major weapons systems is attributable to operating and support costs. Within fiscal year 2001's Navy procurement budget of over $28 billion, O&S costs account for roughly $17 billion. As a result, predicting these costs well in advance of needing to pay for them is vitally important.

These facts have led the US Navy to try to improve its ability to predict aviation operating and support (O&S) costs. To reach this goal, the Navy needs powerful tools that are able to predict the O&S costs of new naval aircraft acquisition programs. This thesis will develop parametric O&S cost models based on 12 years of historical naval aircraft O&S cost data. Such models not only can help determine the annual O&S cost of future aircraft but can also support decisions between competing aircraft acquisition programs. This thesis develops parametric cost models that can be used to determine the future annual O&S costs of new naval aircraft acquisition programs based on physical and performance parameters such as *length*, *weight* and *thrust*. Similar parametric models have been developed for US Air Force aircraft [Ref. 1], submarines [Ref. 2], and non-nuclear surface ships [Ref. 3].

The historic Navy aircraft cost data was provided by the Naval Center for Cost Analysis (NCCA) in a spreadsheet format. The data are extracted from the Navy's Visibility and Maintenance of Operating and Support Cost (VAMOSC) data warehouse. Costs are reported in constant FY00$K. The database contains annual O&S cost from fiscal year 1987 through 1998. The Navy VAMOSC aircraft database contains 2,253

individual observations listing 151 type/model/series (TMS) over eight command categories and 12 years.

The data are further divided into four type categories: *Fighter/Attack (F/A), Cargo/Utility (C/U), Rotary Wings (HELO),* and *Other (OTH).*

Since the development of these cost models are based on annual average O&S costs, graphical analysis and ordinary least squares (*OLS*) analysis were applied to validate the assumption that *the weighted average annual cost for any aircraft-TMS is constant; does not systematically increase or decrease from year to year.* As a result of this analysis, thirteen aircraft-TMSs were excluded from the model in order to obtain a data set free of temporal influences.

After the data was validated, the first model developed was based on multivariate regression. In the multivariate regression case, forward stepwise regression was used to find the model with the best fit. This model resulted in a cost model with seven independent variables. Although this model gives the best estimate of the three major models developed herein, the multivariate model is the least useful one, because realistically, having information on so many different cost drivers of a system simultaneously is unlikely.

Next, a tree-based model was developed. This method produced a parametric cost model for estimating O&S costs for US Navy aircraft based on the three independent variables: *length*, *maximum take-off weight*, and *thrust*.

Finally, for simplicity, single-variable cost estimating relationships, which give rough-order-of-magnitude cost estimates, were also developed.

ACKNOWLEDGMENTS

The author would like to acknowledge and express appreciation to Lieutenant Commander Tim Anderson and Prof. Sam Buttrey who provided exceptional help and technical support throughout this endeavor.

I would like to express my great gratitude to my parents who supported me my entire life and continue to do so.

Finally special thanks and devotion to my loving wife, *Melahat,* for her everlasting understanding, inspiration, and support.

THIS PAGE INTENTIONALLY LEFT BLANK

I. INTRODUCTION

> **When the history of the successful air campaign in Kosovo is written, Naval air will take its rightful place as an effective instrument for the implementation of national policy, whether in combat or peacekeeping missions.**
>
> **Captain Terry McGinnis, USN [Ref. 4]**

The collapse of the Soviet Union in the late 1980s and the substantial technological advancements in both modern warfare and its strategies have forced the US Navy to reduce its force structure while trying to maintain its operational readiness.[1.1] Another effect of the collapse of the Soviet Union was to force US military leaders to focus on regional conflicts like the ethnic cleansing of Kosovo in 1999 instead of traditional "blue-water" threats. At the same time, the Clinton Administration decided to cut the DoD budget and spend the money in other areas, such as health and education. As a result, for the US Navy, obtaining continuity in modernization, readiness, and sustainability not only became a very challenging problem but also required powerful cost analysis tools. Some of those tools, called *cost estimating relationships* (CERs), are "… mathematical expressions relating the cost of a dependent variable to one or more independent cost driven variables." [Ref. 5]

With recent budgetary restrictions and numerous conflicts to resolve around the world, the US Naval Air Forces must achieve 21st century capabilities while maintaining their current readiness levels. This has compelled the US Navy to improve its ability to

[1.1] DoD *Dictionary of Military and Associated Terms* defines readiness as "the ability of forces, units, weapon systems, or equipment to deliver the outputs for which they were designed."

predict aviation operating and support (O&S) costs. Approximately 64% of the life cycle cost (LCC) of major weapons systems is related to their operating and support costs. With next year's procurement budget of over $26 billion, O&S costs roughly approach $17 billion. As a result, predicting these costs well in advance of needing to pay for them is critical.

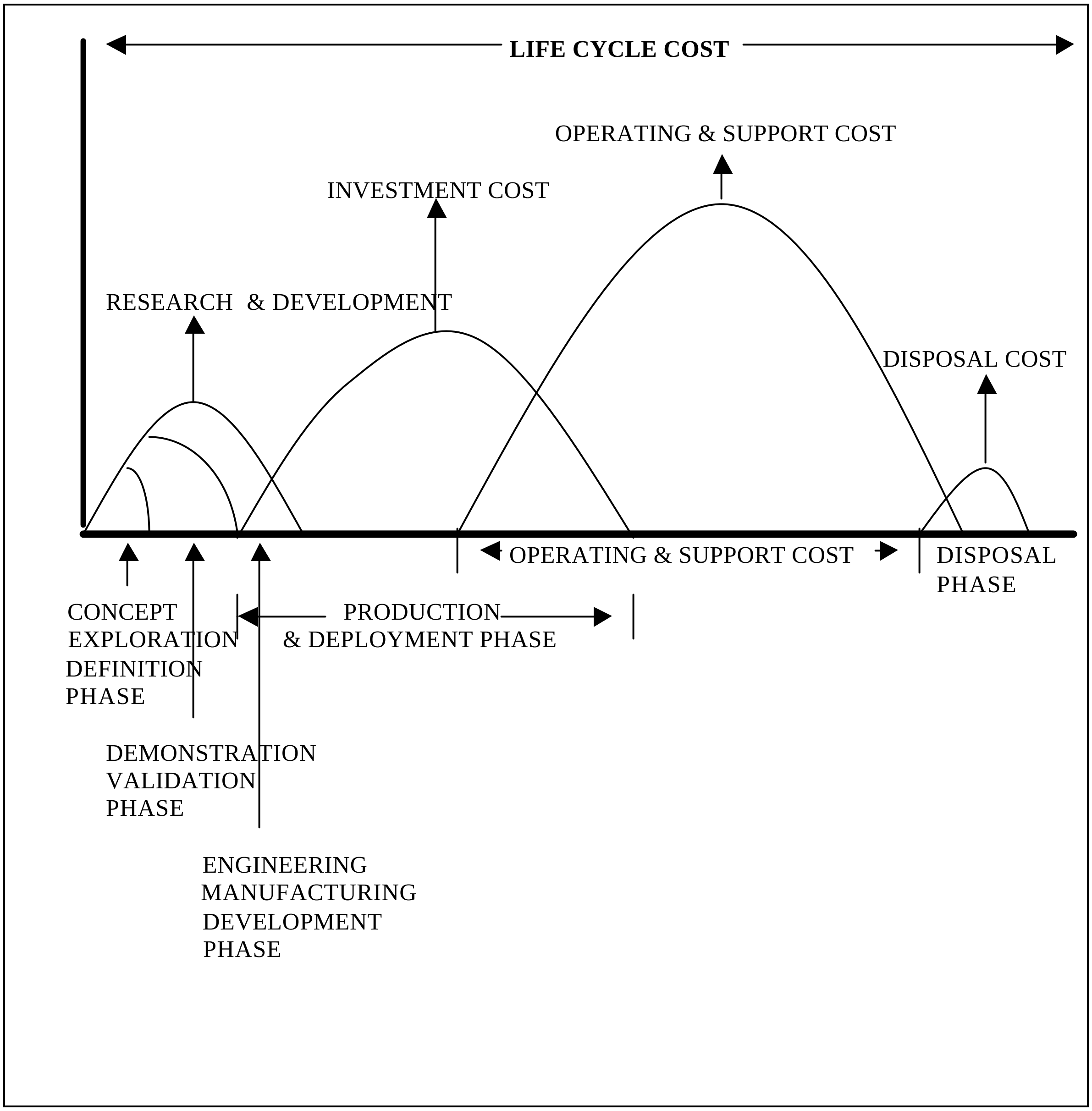


Figure 1.1 Illustration of Program Life Cycle Cost by Acquisition Phase (From OSD CAIG)

The acquisition life cycle begins by determining the mission and its goals and continues through research and development, production, operating and support, and disposal. Figure 1.1 displays a snapshot of this life cycle. Table 1.1 shows the designed life expectancies of some major weapon systems. Within these average 20-year life expectancies, the O&S costs will comprise a major portion of the expenditures. Therefore acquisition decision makers must be very careful when comparing and choosing new acquisition alternatives.

SYSTEM TYPE	YEARS
Cargo Aircraft	25
Attack Aircraft	25
Fighter Aircraft	20
Small Missiles	15
Helicopters	20
Large Missiles	20

Table 1.1 Designed System Life Expectancies (From OSD CAIG)

Hence the Navy needs powerful tools that can predict the O&S costs of new naval aircraft. This thesis will develop parametric O&S cost models based on 12 years of historical naval aircraft O&S cost data. Such models not only can help determine the annual O&S cost of future aircraft but can also help determine which new aircraft acquisition programs should be chosen.

THIS PAGE INTENTIONALLY LEFT BLANK

II. BACKGROUND

A. OPERATING AND SUPPORT COST ESTIMATION

The following discussion on operating and support cost estimation is obtained from the *Operating and Support Cost Estimating Guide* prepared by the Office of the Secretary of Defense, Cost Analysis Improvement Group (OSD CAIG). The OSD CAIG is responsible for improving and establishing criteria and procedures for cost analysis within DoD, and as stated in DoD Instruction 5000.2M [Ref. 6] and DoD directive 5000.4 [Ref. 7], the OSD CAIG behaves as the primary advisory body to acquisition milestone decision authorities on cost related issues. The guide, prepared and published by OSD CAIG, should be used by all DoD components and as stated explicitly in the manual itself, “should be considered the authoritative source document for preparing O&S cost estimates.”

O&S costs constitute a major portion of the life cycle cost of a system. Therefore O&S costs deserve a healthy consideration in all acquisition decisions. The parametric cost models presented in this thesis have two major objectives: one is to develop and construct the best fitting aircraft O&S cost estimating model, and the other is to design a robust, rough-order-of-magnitude aircraft O&S cost estimating methodology for US Navy aircraft when a cost analyst has only limited information available. These methods will generate reliable O&S cost estimates for new aircraft acquisition programs.

B. VISIBILITY AND MANAGEMENT OF OPERATING AND SUPPORT COSTS

The Navy started to collect actual O&S cost data of aircraft and other weapons systems in 1976. This effort was first managed by the Naval Air Systems Command (NAVAIR). In 1992 NAVAIR transferred this duty to the Naval Center for Cost Analysis (NCCA).

The Navy Visibility and Management of Operating and Support Costs (VAMOSC) database contains actual O&S costs and related information (flying hours, manpower, etc.) about aircraft, ships, tracked or wheeled vehicles and ordnance. The following list shows the current VAMOSC database summary:

• 478 Ships	FY84-98
• 58 Shipboard Systems	FY86-98
• Aircraft Subsystems	FY87-98
• 17 Tactical Missiles	FY91-98
• 3 Torpedoes	FY91-98
• 17 Tracked or Wheeled Vehicles	FY92-98
• 151 Aircraft Type / Model / Series (TMS)	FY87-98

The Aircraft Type/Model/Series Report (ATMSR) of the Navy VAMOSC database, which contains 12 years of historical data for Naval aircraft, will form the basis for the data analysis and cost estimation modeling. In this thesis, the estimated O&S cost for each Type/Model/Series (TMS) is divided into six primary component cost elements. [Ref. 8]

- Organizational Costs
- Intermediate Maintenance Costs
- Depot Maintenance Costs
- Training Support Costs
- Recurring Investment Costs
- Other Functions

The costs related to organizational level operations and maintenance of regular operating aircraft are called *organizational costs*. Organizational costs have the following sub-elements:

- Personnel
    - Military Personnel Costs
    - Civilian Personnel Costs
    - Contractor Personnel Costs

- Organizational Operations Costs
    - Temporary Additional Duty Costs
    - Training Expendable Stores
    - Support Supplies
    - Aviation Depot Level Repairables (AVDLR)
    - Fuel Costs

The costs related to intermediate level operations and maintenance supports are called *intermediate maintenance costs*. Their sub-elements are as follows:

- Personnel
    - Military Personnel Costs
    - Civilian Personnel Costs
    - Contractor Personnel Costs

Costs associated with depot level maintenance performed for the aircraft by private sector or public facilities are called depot maintenance costs. The cost is broken down into six sub-elements:

- Aircraft (A/C) Rework Costs
- Total Units
- Engine Rework
- Aircraft Support Services
- Aircraft Emergency Repair Costs
- Aircraft Engine Emergency Repair Costs

The costs related to the organizational costs of Fleet Readiness Squadrons (FRS), maintenance, training, and specialty training are called training support costs. Following are the sub-elements of training support costs:

- FRS Costs
    - FRS Personnel
    - FRS Organizational Operations Costs

- O&S Training
    - Operational Training
    - Maintenance Training

The costs of recurring investment items directly related to the various TMS are defined as *recurring investment costs* and their structure follows:

- Modifications
    - Modification Spares
    - Modification Kits
    - Modification Installation Costs

Finally, other functions are costs that are directly attributable to the aircraft but do not fall into any other of the five primary components included in the ATMS report.

III. DEVELOPING A PARAMETRIC COST MODEL

A. THE PARAMETRIC COST ESTIMATING PROCESS

1. Collecting, Normalizing, and Evaluating the Historical Cost and Parametric Data

To make reliable predictions or estimates using a statistical approach, one needs an extensive database of historical costs. The Navy's VAMOSC database offers cost analysts the advantage of using actual expenditures of fielded systems in estimating the O&S costs of a new system. However a problem arises if the historical cost data lacks uniformity. The solution to this inadequacy is normalization. "Normalization…is an attempt to create consistent cost data through the measurement and subsequent neutralization of the impacts of certain external influences." [Ref. 9] All the external influences must be quantified. Adjusting the actual cost data to a uniform basis improves the data consistency by reducing the dispersion of the data points.

Once the data is collected and normalized, data analysis and regression models can be used to show that the O&S cost of each aircraft-TMS tends to be constant from year to year. Moreover, the mean values of these costs and their variances can be used to estimate future costs. In addition, at this point one must ensure that the model developed shows a functional relationship between the dependent variable (O&S cost) and the independent variables (data used for determining the O&S cost estimate). This relationship is mathematically denoted as follows:

$$O\&S\ Cost = f\{Independent\ Variable(s)\}$$

The functional relationship mentioned above will be determined through regression analysis. The independent variables or "cost drivers" may be divided into one of three major categories: size, performance or technology parameters.

B. THE PROPOSED TOTAL ANNUAL O&S COST

A parametric cost model is "a group of cost estimating relationships used together to estimate entire cost proposals or significant portions thereof" (*Parametric Cost Estimating Handbook*, 1995). In this thesis, cost is represented by the expenditure of total annual O&S dollars and aircraft are used as the major weapon system.

This study will construct three different parametric cost models to estimate the total annual O&S cost for US Navy aircraft.[3.1] *Multivariate linear regression*, *a tree-based* model, and *single variable regression* will be applied to the same historical cost database. Since the VAMOSC database does not provide the O&S cost of each individual aircraft,[3.2] and since each Command has a different number of aircraft, the Weighted Ordinary Least Squares (WLS) method[3.3] is used for the first and the second models, with "number of aircraft" as the weighting parameter.

In the multivariate regression case, forward stepwise regression is used to find the model with the best fit. Although this model gives the best estimate of the three models,

---

[3.1]The physical parameters used in this thesis are: overall length (OAL), height, wing span (rotor diameter for rotary-wing aircraft) of an aircraft, in feet, maximum take off weight of an aircraft in pounds, maximum speed of an aircraft in miles per hour (MPH), thrust of an aircraft in pounds static thrust (lb. st), manpower (crew size), number of engines, type of aircraft and which Command it belongs to. The independent variables used in this thesis are gathered from the sources indicated in Ref. 10-14.

[3.2] Navy VAMOSC database only provides O&S cost expenditures of the total number of aircraft that a Command has in any particular year. (See Appendix A, Raw Data)

[3.3]When an appropriate regression relation is found but the variances of the error terms are either unequal or not known, as in our case, an alternative is weighted least squares (WLS), a procedure that is frequently used in these circumstances. This method will be explained in detail in Chapter V, pages 31-33.

it is the least useful one, because in practical terms, having information on numerous different cost drivers of a system simultaneously is unlikely.

A tree-based model, which provides an alternative to linear models for regression problems will be used as the second model. This model will construct a parametric cost model for estimating O&S cost for US Navy aircraft based on these independent variables: *length*, *maximum take-off weight*, and *thrust*.

Finally, single-variable models, which give rough-order-of-magnitude cost estimates, are also developed.

The historic cost data will be evaluated for consistency and will be normalized as appropriate. The three models mentioned above will be applied to four aircraft categories (attack/fighter aircraft, cargo/utility aircraft, rotary-wing aircraft and other aircraft) to obtain O&S cost estimating relationships.

Documentation of the parametric models will include the source of the data used to derive parameters, and the size and the range of the database. How these parameters are obtained and derived, what the limitations of the models are, and how well the models estimate their own database will also be included in the documentation.

THIS PAGE INTENTIONALLY LEFT BLANK

IV. DATA ANALYSIS

A. DATA COLLECTION AND NORMALIZATION

The Navy aircraft data was provided by NCCA in spreadsheet format (see Appendix A for a sample of the raw data). The data was extracted from the Navy VAMOSC data warehouse. Cost elements are reported in constant FY00$K. The database contains the annual O&S cost from fiscal year 1987 through 1998. The Navy VAMOSC aircraft database contains 2,253 individual observations listing 151 TMS over eight Commands[4.1] and 12 years.

The Navy aircraft cost data provided by NCCA is divided into 2 major sub-elements:

- Non-Cost Elements:
  - Flying Hours
  - Number of Aircraft
- Cost Elements:
  - Organizational Costs
  - Intermediate Maintenance Costs
  - Depot Maintenance Costs
  - Training Support Costs
  - Recurring Investment Costs
  - Other Functions

Aircraft that have only a few data points are excluded from this study. An aircraft-TMS is removed if it has less than three observations. Two aircraft-TMS, NU-1B and X-26A are also excluded because of the unavailability of related cost-driver parameters. Table 1 shows the list of US Navy aircraft-TMS that are removed from the database.

[4.1] The Commands are: Atlantic Fleet (LANFLT), Miscellaneous (MISC), Naval Air Systems Command (NAVAIR), Naval Forces Europe (NAVEUR), Naval Education and Training (NET), Marine Corps, Reserves, and Pacific Fleet (PACFLT). To avoid linear dependency in regression analysis, Marine Corps, NAVEUR, NAVAIR, and MISC are combined into one Command called "OtherCommands."

AIRCRAFT TMS	PERIOD OF DATA	COMMENTS
AV-8C	1987	Small Sample Size
C-1A	1987-1988	Small Sample Size
E-6B	1998	Small Sample Size
HH-60J	1991	Small Sample Size
OH-6B	1991	Small Sample Size
QF-4B	1987	Small Sample Size
QT-38A	1987-1988	Small Sample Size
TF/A-18A	1994-1995	Small Sample Size
T-39N	1995 and 1998	Small Sample Size
T-47A	1989	Small Sample Size
TAV-8A	1987-1988	Small Sample Size
U-8G	1987-1988	Small Sample Size
UA-3B	1989	Small Sample Size
UH-60A	1991	Small Sample Size
YSH-60B	1987	Small Sample Size
YSH-60F	1991	Small Sample Size
NU-1B	1987-1991	Physical Parameters unavailable
X-26A	1987-1991	Physical parameters unavailable

Table 4.1. US Navy Aircraft-TMS Removed from the Navy Cost Database due to Small Sample Sizes, and Unavailable Independent Variables

The modified database contains 2,223 individual observations for 137 aircraft-TMS.

The cost data provided by NCCA is further divided into four categories: Fighter/Attack (FA), Cargo/Utility (C/U), Rotary-Wings (HELO), and Other (OTH). Appendix B provides the full list of aircraft-TMS for each category.

B. POWER TRANSFORMATIONS

Skewness and outliers cause problems for the regression model because they tend to lead to misinterpretation of the cost analysis. Fortunately power transformation is a useful tool that can be applied to normalize skewed data. [Ref. 15] The independent variable weight is chosen for study in detail. (See Appendix C for the rest of the variable transformations)

Since all dependent and independent variables, such as weight in figure 4.1, are positively skewed, the data are transformed using the natural logarithm. The natural logarithm of Y is simply the power to which e (e = 2.71828…) must be raised to yield Y. Figure 4.2 shows the graphs of the transformed data. Such a transformation reduces skewness and lessens the effects of the outliers.

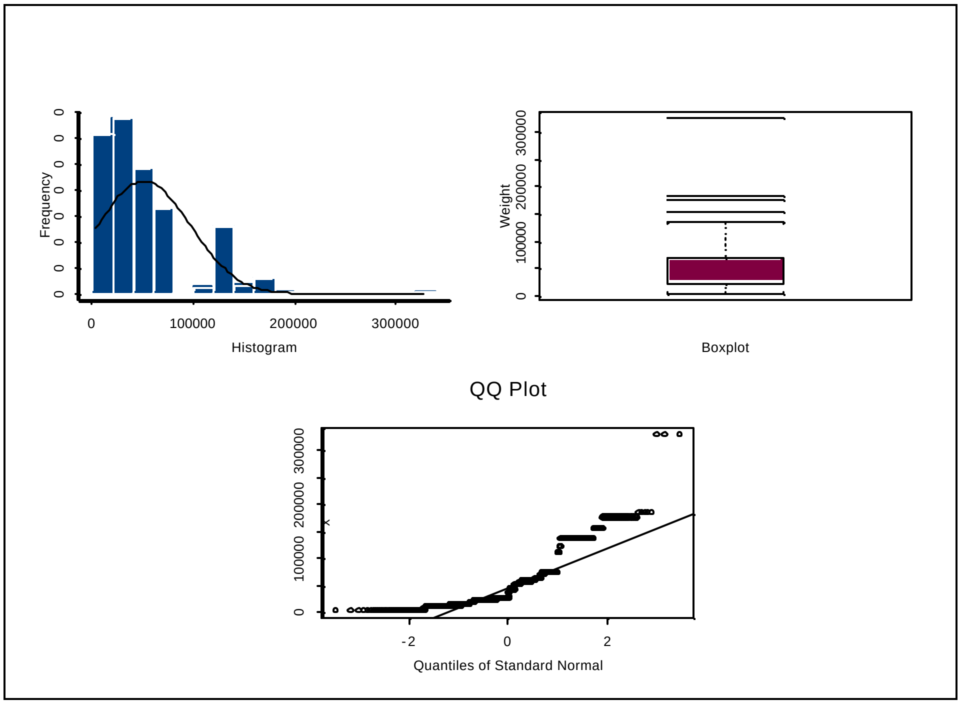


Figure 4.1 The Histogram, Boxplot, and QQ Plot Graphs for Weight

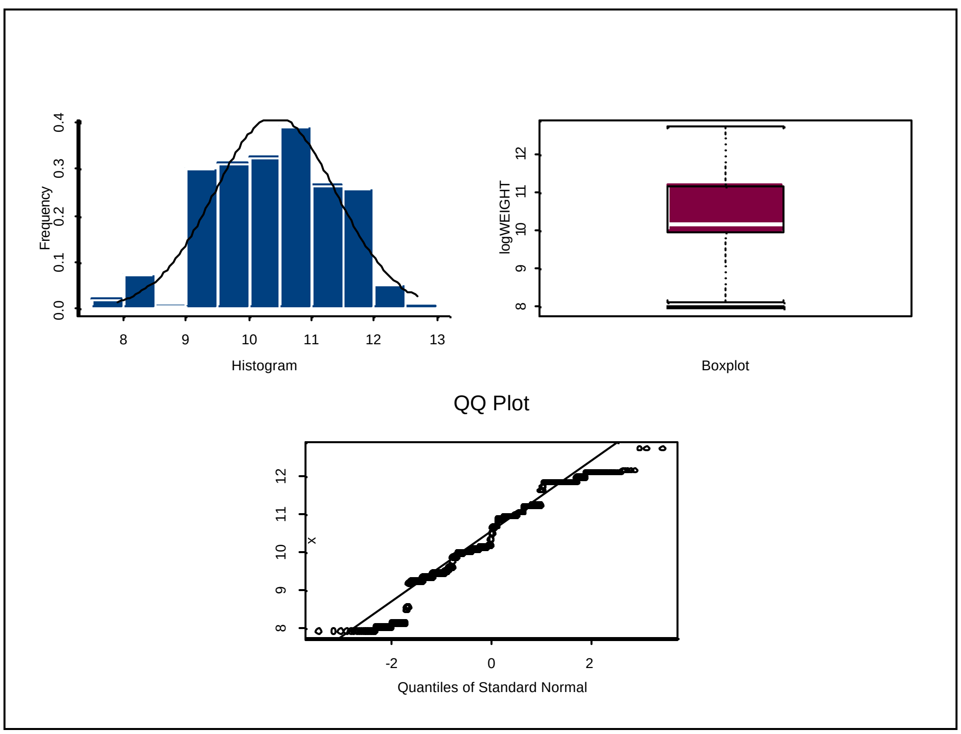


Figure 4.2. Histogram, Boxplot, and QQ Plots for Ln [Weight]

More evidence supporting the use of data transformation is seen by examining O&S cost versus weights, plotted in figures 4.3 and 4.4. The transformed data appear more linear. (See Appendix D for the rest of the scatter plots)

Therefore, this thesis will perform all subsequent cost modeling and analysis using the natural logarithm of all cost and independent variable data.

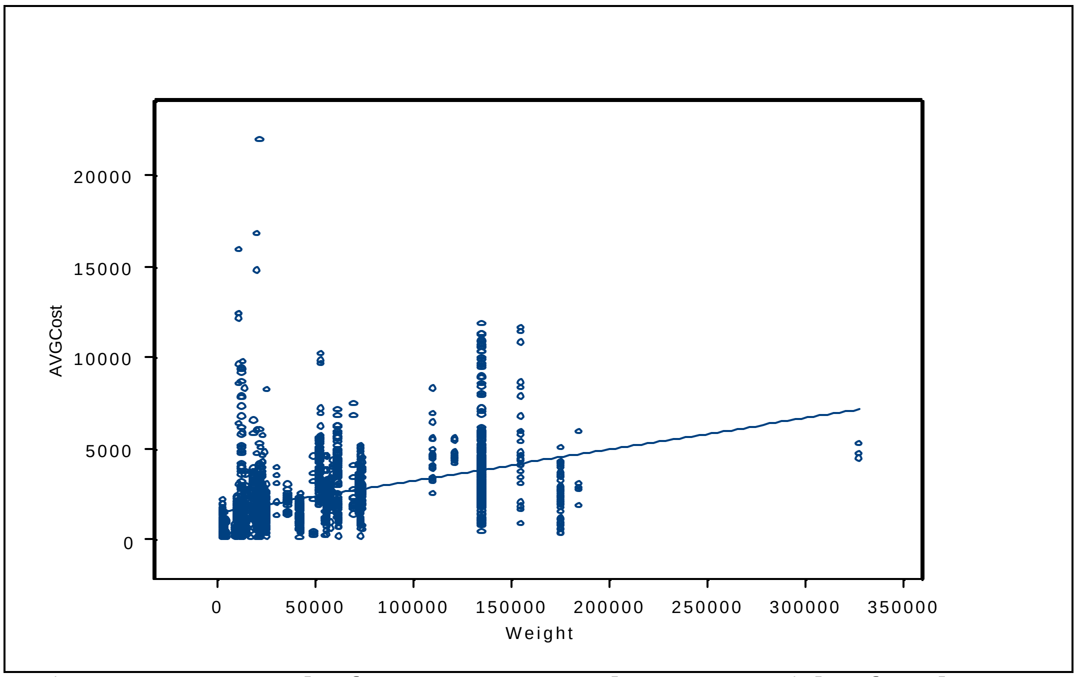


Figure 4.3 Scatter Plot for Average Annual Cost vs. Weight of Each TMS

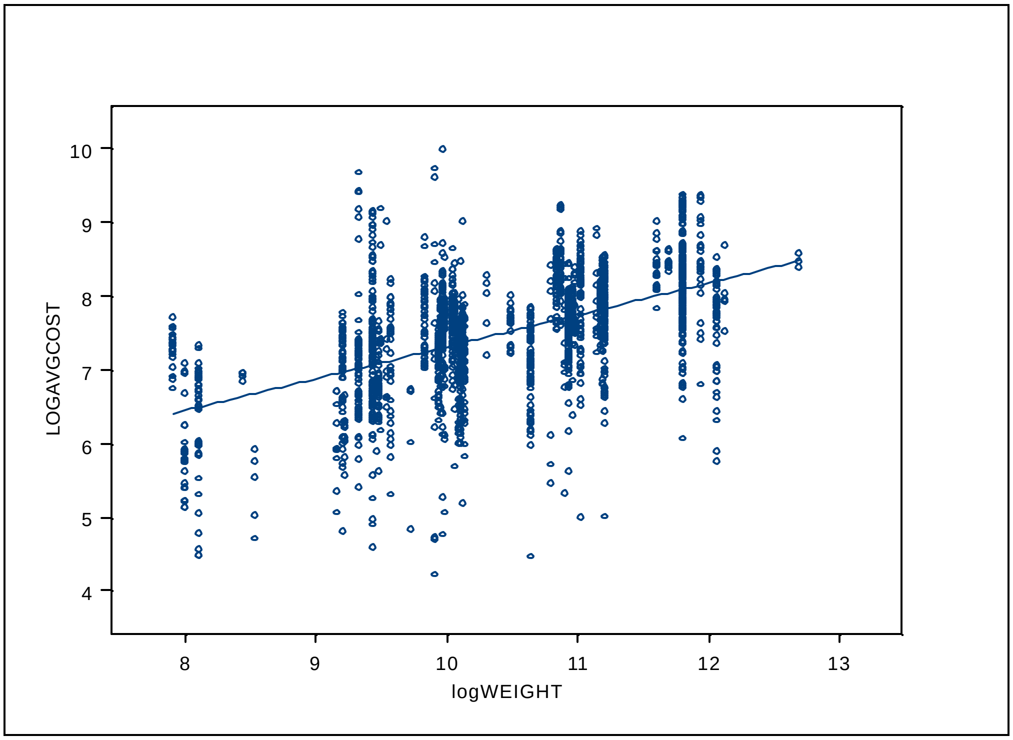


Figure 4.4 Scatter Plot for Ln [Average Cost] vs. Ln [Weight]

C. ASSUMPTIONS

Since the development of the cost model is based on annual average O&S costs, two assumptions about the VAMOSC database should be validated:

- The weighted average annual cost[4.2] for any aircraft-TMS is constant; it does not systematically increase or decrease from year to year.
- Annual O&S cost observations are random samples and drawn from a hypothetical population of aircraft.

For the first assumption, one might think that as an aircraft grows older, maintenance and upkeep cost should increase. This is called *time-dependent behavior*.

[4.2] Since the individual aircraft O&S cost data for each year is not available, weighted annual average O&S costs will be used to validate the first assumption. Suppose a database has two Commands, A and B, with 5 and 7 aircraft, respectively. Assume the average annual O&S cost per aircraft for Command A is $100 and for Command B is $200. The weighted annual average cost is then:

{ (5*100) + (7*200) } / (5+7) = $158.33 (For further information about weighted averages and variances refer to *Linear Statistical Models: An Applied Approach*, Bowermann/O'Connell, PWS-KENT Publishing, 1990.)

Although this assumption seems reasonable, further analysis will reveal that it is not valid for the current database.

D. VALIDATION

Graphical analysis and ordinary least squares (OLS) analysis will be applied to validate the assumptions mentioned above. After these validations, one may say that the annual O&S cost for each aircraft-TMS are constant (neither systematically increasing or decreasing) from year to year, enabling use of the data in constructing a cost model for US Navy aircraft.

1. Line Charts [Ref. 16]

The line charts provided by Microsoft Excel are one of the basic tools for understanding relationships between two variables. In this study the natural log of the weighted average annual O&S cost for each aircraft-TMS will be plotted against aircraft-year.[4.3] One aircraft-TMS is chosen from each aircraft category to study in detail. (See Appendix E for the line charts of the remaining aircraft-TMS). The randomly selected aircraft-TMSs are:

TMS	**CATEGORY**
F/A-18A	Attack / Fighter
TA-4F	Other
C-2A	Cargo / Utility
SH-60B	Rotary-Wing

[4.3] Aircraft-year is defined as the year during which O&S costs are accumulated.

Figure 4.5 shows the chart lines for the rotary-wing aircraft-TMS and figure 4.6 is for the three fixed-wing aircraft-TMS selected previously. By looking at the graphs in figures 4.5, 4.6 and in Appendix E, one can conclude visually that the natural log of the weighted average annual O&S costs for each aircraft-TMS are relatively constant from year to year, which implies that the actual weighted average costs are also constant from year to year. While extreme points exist, it is believed that they are the results of newly commissioned aircraft, and the decommissioning of some of the older aircraft.

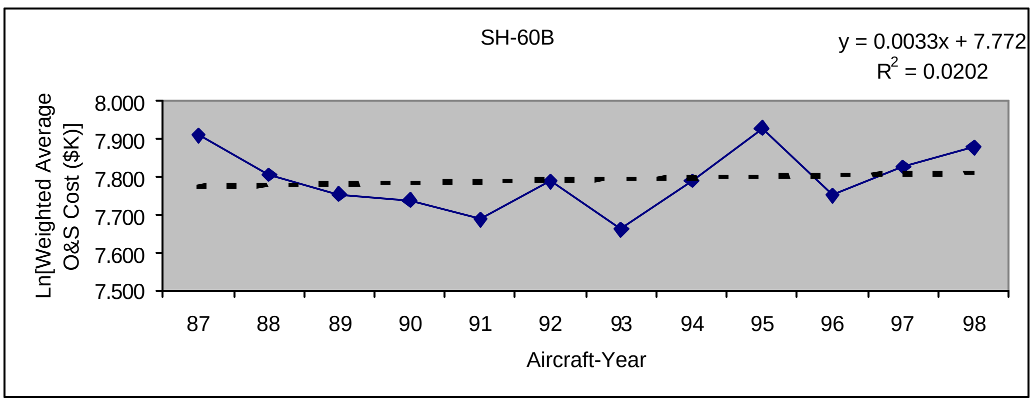


Figure 4.5 Line Chart and the Best OLS Fit for the SH-60B

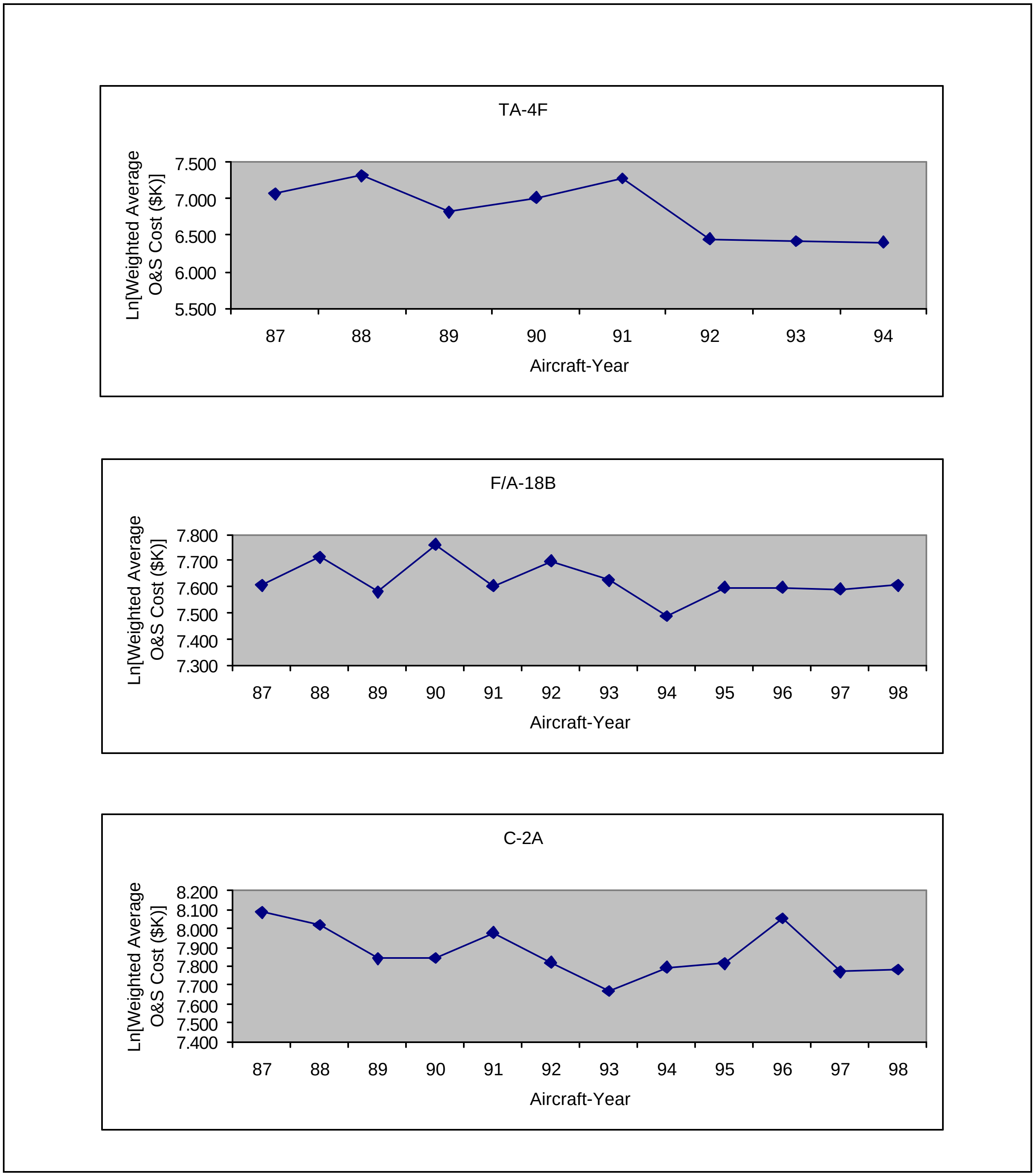


Figure 4.6 Line Charts for Three US Navy Aircraft-TMS

The general presumption "as the aircraft get older, their O&S costs rise" fails for these data.

Suppose the regression line has an equation $Y_i = B_o + B_1X_i$. To validate the assumption that the natural log of the weighted average O&S costs are relatively constant from year to year, a zero, or approximately zero, slope should be obtained. The Microsoft Excel "Trend Line" command is used to determine these trends. (See figure 4.5 and figure 4.7)

Although the slopes in figures 4.5 and 4.7 appear relatively flat, there are some aircraft-TMS which have a markedly increasing trend. Figure 4.8 is a sample of two aircraft-TMS reflecting an increasing trend. (See Appendix E for the rest of the graphs). Even though these graphs show an obvious increasing trend between the weighted average annual O&S cost and aircraft-year, no conclusion can be made and further analysis is needed. To test whether or not the O&S costs are constant from year to year, OLS regression will be used to quantify the relationship.

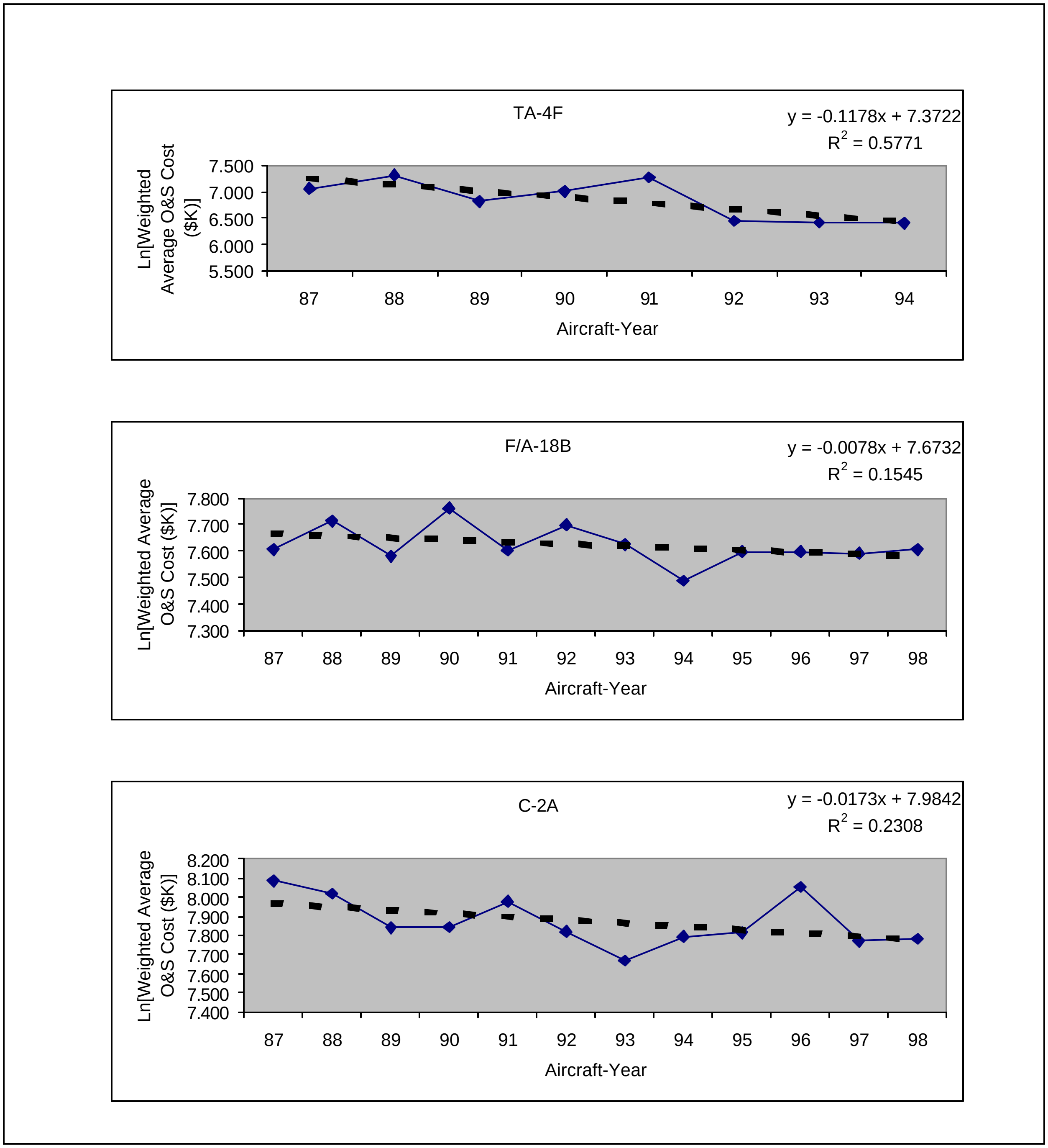


Figure 4.7. OLS: The "Best-Fit" for Three US Navy Aircraft-TMS

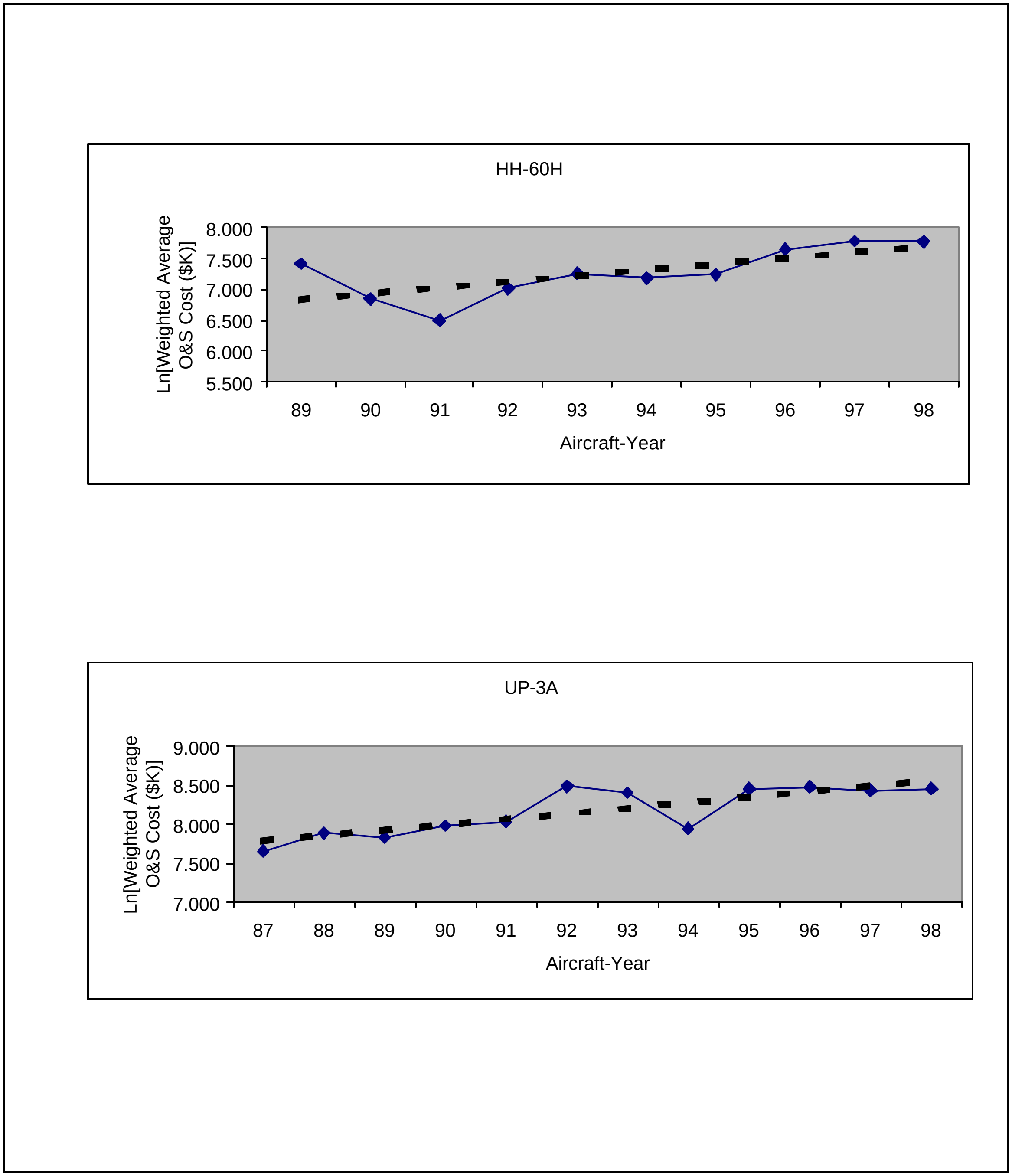


Figure 4.8. Linear Trendline Indicating Increasing Cost Relationship for Two US Navy Aircraft-TMS

1. Regression Analysis and Hypothesis Testing

"Regression analysis is a statistical tool that utilizes the relation between two or more quantitative variables so that one variable can be predicted from the other or others."[Ref. 17] Regression analysis serves three important purposes: *description, control*, and *prediction*. In this thesis prediction will be the major concern. The regression line is:

$$Y_i = b_0 + b_1 X_i + e \qquad \text{Eq} \quad 4.1$$

where Y_i is the natural log of the weighted annual average O&S cost for the i^{th} aircraft-TMS and X_i is the explanatory variable. b_0 and b_1 are the intercept and slope. The slope of the line indicates the change in the mean of the probability distribution of $Ln(Y_i)$ per year. In this case Y_i represents the natural log of the weighted average annual O&S cost in year *i*. X_i is the year *i*, and e_i is a random error term assumed to have a mean zero and variance s^2.

OLS, one of numerous techniques in regression analysis, is by far the most often used. Yet OLS is very sensitive to extreme data points called *outliers*. If their existence is due to a mistake, they are just discarded; if not, outliers may convey significant information about the relationship between the O&S cost and an aircraft-year. [Ref. 18]

OLS regression is performed using S-PLUS® 2000 [Ref. 19] to see how good the predicted values are. Table 4.2 summarizes the data. The four aircraft-TMS shown previously will be used. (See Appendix F for the entire aircraft-TMS regression summary).

Aircraft-TMS	Sample Mean ln(FY00$K)	SE ln(FY00$K)	CV	R^2	R^2 (adj)	r
F/A-18A	7.623	0.07	0.90%	0.15	0.07	0.39
TA-4F	6.842	0.27	3.90%	0.58	0.51	0.76
SH-60B	7.793	0.09	1.10%	0.02	0.08	0.14
C-2A	7.872	0.12	1.50%	0.23	0.15	0.48

Table 4.2 Summary of Predictive Measures for Four US Navy Aircraft -TMS (in Natural Log Scale)

SE is the standard error of the regression line; the smaller the SE, relative to the mean, the better the fit. R^2 is the proportion of the variance of *ln(Y)* explained by *X*. It ranges from 0 to1 and the closer to 1 the better the explanation. The adjusted R^2 has the same interpretation as the normal R^2 but it is preferred in more complex data or in data having small sample sizes. [Ref. 18] The correlation between aircraft O&S cost and aircraft-year is represented by *r*. The correlation coefficient varies between –1 and 1, and the closer to –1 or 1 the stronger the correlation. The coefficient of variance (CV) is simply the ratio of SE to the sample mean. [Ref. 3]

The next step is to determine whether or not the slopes of these regression lines are significantly different from zero. For the purposes of this analysis, the desired cost data are those that show no increasing or decreasing trend in cost versus time. Therefore, slopes of magnitude zero are desired. The *p*-value "is the smallest level of significance at which H_0 would be rejected when a specified test procedure is used on a given data set. Once the *p*-value has been determined, the conclusion at any particular level a results from comparing the *p*-value to cut-off point a .

p-value $\leq a \;\Rightarrow$ reject H_0 at level a
p-value $> a \;\Rightarrow$ do not reject H_0 at level a

It is customary to call the X-variable *significant* when H_0 is rejected and *not significant* otherwise." [Ref. 20]

H_0 asserts that there is no relation between Y_i (weighted average annual O&S cost), and X_i (aircraft-year) in the population. It is stated as:

$$H_0 : b_1 = 0$$

The alternative to the null hypothesis is to claim that the slope is not zero, in other words that there is a relationship between cost and aircraft year:

$$H_a : b_1 \neq 0$$

In this analysis H_0 is rejected if the p-value is less than 0.01. Table 4.2 gives the p-values for the four aircraft-TMS examined previously. (See Appendix F for the p-values of all the VAMOSC aircraft-TMS.) To maintain consistency and have better fit, the aircraft-TMSs having a p-value less than the cut-off point, 0.01, are removed from the VAMOSC data.

Aircraft-TMS	OLS Regression (Cost ~ Year), P-Value	Significance (Are the slopes different from zero?)
F / A-18A	0.206	NO
SH-60B	0.659	NO
TA-4F	0.029	NO
C-2A	0.114	NO

Table 4.3 t-Test Results for Four US Navy Aircraft-TMS

In other words, those observations that show an increasing or decreasing trend are removed, leaving 1,890 individual observations and 122 aircraft-TMS. Table 4.4 shows the aircraft-TMS that are excluded from the data frame due to small p-values. (See Appendix F for the p-values for the entire database.)

AIRCRAFT TMS	PERIOD OF DATA	COMMENTS
A-6E	1987-1997	Removed after Regression Analysis
C-130F	1987-1994	Removed after Regression Analysis
CH-53D	1987-1998	Removed after Regression Analysis
E-6A	1989-1998	Removed after Regression Analysis
KC-130R	1987-1998	Removed after Regression Analysis
RH-53D	1987-1995	Removed after Regression Analysis
S-3A	1987-1995	Removed after Regression Analysis
SH-2F	1987-1994	Removed after Regression Analysis
SH-3H	1987-1998	Removed after Regression Analysis
TA-4J	1987-1998	Removed after Regression Analysis
UP-3A	1987-1998	Removed after Regression Analysis
US-3A	1989-1994	Removed after Regression Analysis
YF-4J	1987-1991	Removed after Regression Analysis

Table 4.4 The Aircraft-TMS Excluded from the Model after OLS Regression Analysis

As a result of this analysis, the first assumption made, that “the natural log of the annual O&S cost for each aircraft-TMS is constant from year to year,” is a reasonable claim for the remaining aircraft-TMS.

THIS PAGE INTENTIONALLY LEFT BLANK

V. FORMULATION OF THE COST MODEL WITH WEIGHTED MULTIVARIATE REGRESSION

A. WEIGHTED LEAST SQUARES REGRESSION

When a regression relationship has been found, but the variances of the error terms are unequal, an alternative to OLS is weighted least squares (WLS) regression, a procedure that is frequently effective in these circumstances.

As mentioned before, individual aircraft O&S cost data is not available, and each command has different numbers of aircraft. There is no information about how the aircraft O&S costs are distributed within each TMS. Figure 5.1 depicts a hypothetical example of how these costs may differ within each aircraft TMS. Even though both scatter plots have the same mean values by year, they obviously have different variances. Therefore weighting by *number of aircraft* will reduce this variation difference.

One way to explain WLS is to compare it to unweighted least squares regression. The least squares criterion for simple linear regression is:

$$Q = \sum_{i=1}^{n} (Y_i - b_0 - b_1 X_i)^2 \qquad \text{Eq} \quad 5.1$$

The equation above weights each Y equally. The WLS criterion provides different weights for each observation:

$$Q_w = \sum_{i=1}^{n} w_i (Y_i - b_0 - b_1 X_i)^2 \qquad \text{Eq} \quad 5.2$$

where Q_w is the measure of discrepancy between the observations and the model's prediction and w_i are the weighting parameters which are inversely proportional to the variances s^{2}.

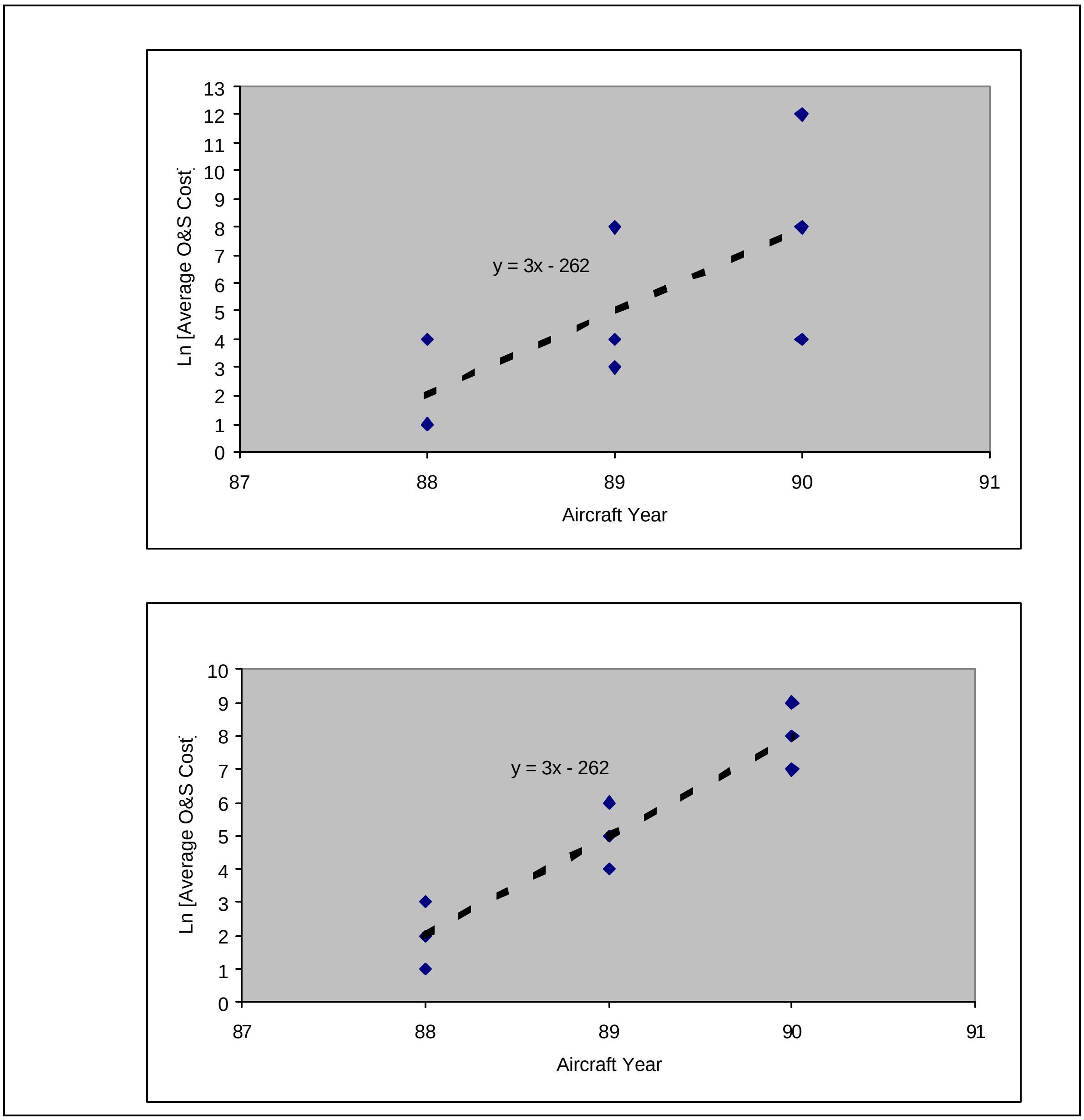


Figure 5.1 Example of How Average Aircraft O&S Costs May Differ within Each TMS

S-PLUS uses a *weights* column to supply a vector of weights to be used by the least squares fitting algorithm. In this analysis *number of aircraft* in each command is used as a weighting factor. If weights are supplied, the algorithm minimizes the sum of the squared residuals multiplied by the weights:

$$r = \hat{y}_i - y_i \qquad \text{Eq} \quad 5.3$$

$$Q_w = \sum_{i=1}^{n} w_i * r_i^2 \qquad \text{Eq} \quad 5.4$$

The WLS criterion for multiple regression is:

$$Q_W = \sum_{i=1}^{n} w_i \{Y_i - b_0 - b_1 X_{i1} - \cdots - b_{p-1} X_{i,p-1}\}^2 \qquad \text{Eq} \quad 5.5$$

Let the matrix W be a diagonal matrix containing the weights w_i:

$$\underset{n*n}{W} = \begin{bmatrix} w_1 \ldots\ldots\ldots\ldots\ldots\ldots 0 \\ 0 \ldots\ldots w_2 \ldots\ldots\ldots\ldots 0 \\ 0 \ldots\ldots\ldots\ldots\ldots\ldots w_n \end{bmatrix}$$

The weighted least squares normal equations can be expressed as follows:

$$(X'WX)b = X'WY$$

and the weighted least squares estimators of the regression coefficients are:

$$\underset{p*1}{b} = (X'WX)^{-1} X'WY \qquad \text{Eq} \quad 5.6$$

The equations 5.3 through 5.6 can be found in Ref. 15.

If the weights in Eq. 5.6 are equal, then WLS gives the same b_i as ordinary least squares. OLS is a special case of WLS and WLS is a special case of generalized least squares (GLS) where W is diagonal. [Ref. 15]

By using the S-PLUS' *Weights* argument, WLS helped reduce the variance in OLS prediction. If the individual aircraft O&S costs were available then the OLS using those O&S costs should be about the same as WLS using the *Command* average O&S costs.

B. DEVELOPING A COST ESTIMATING MULTI-VARIABLE MODEL USING THE FORWARD INCLUSION METHOD

Computers can examine all possible subsets of X variables and can order models from the best to the worst fitting. In this study there are 10 independent variables, and there are $2^{10} - 1 = 1023$ possible subsets. The ten independent variables are:

Commands	Categorical Variable LANFLT PACFLT NET MISC NAVAIR NAVEUR RESERVE
Weight	Continuous Variable (in lbs)
Length	Continuous Variable (in ft)
Wing Span	Continuous Variable (in ft)
Height	Continuous Variable (in ft)
Thrust	Continuous Variable (in st lb)
Type	Categorical Variable (A/F, C/U, OTH, HELO)
Speed	Continuous Variable (in mph)
Crew	Categorical Variable (Number of Manpower on Board)
Engines	Categorical Variable (Number of Engines)

A method called "*Stepwise Regression*" provides easier automated search procedures to obtain the optimum number of independent variables to include in the model. There are three different stepwise methods:

- Backward Inclusion
- Forward Inclusion
- Both

In the backward inclusion method, the model starts with all independent variables selected, then looks for the X variables that will least reduce the R^2, if deleted. Only one variable is deleted at every iteration, and this process continues to remove the X variables that produce the smallest further decrease in R^2.

The forward inclusion model starts with the Y-intercept and includes those independent variables that have the largest correlation with the predicted variable. Then at every iteration the procedure adds the independent variable, which produces the biggest increases in R^2. [Ref. 18]

The third method is just the combination of the backward and forward inclusion methods. The process starts with the full model and at each step considers whether to bring back any previously dropped variable.

Instead of R^2, S-PLUS uses the *AIC* [Ref. 19] criterion to stop the stepwise regression iterations. The *AIC* criterion is concerned with the *total mean squared error*[5.1] (MSE) of the n fitted values for each subset regression model. The model, which includes all $p-1$ potential X variables, is assumed to have been carefully chosen so that MSE ($X_1,\ldots X_{p-1}$) is an unbiased estimator of S^2. AIC can be stated as [Ref. 19]:

[5.1] A measure of the combined effect of the bias and sampling variation is the expected value of the squared deviation of biased estimator from the true parameter. This is called the *mean squared error*.

$$AIC = [n * \log (SSE_P / n)] + 2*(n-p) \qquad \text{Eq 5.7}$$

where SSE_p is the error sum of squares for the fitted subset regression model with p parameters that is,p1 predictor variables and an intercept.

In using the AIC criterion one seeks to identify subsets of *X* variables for which the AIC value is small. The sets of *X* variables with small AIC values have a small mean squared error, and this makes the $bias^2 + variance$ of the regression model small.

Although the procedures mentioned above are very powerful tools to select the right independent variables and to construct CERs, one must not forget that these procedures sometimes arrive at an unreasonable "best" subset when X variables are highly correlated. To examine the correlation between the *X* variables, the scatter plot matrix and the correlation matrix of estimates are studied. Even though the scatter plot matrix in figure 5.2 shows a correlation between the chosen *X,* the correlation coefficients between the independent variables range from 0.0024 to 0.63. A rule of thumb is that correlations greater than 0.7 require further examination. [Ref. 21]

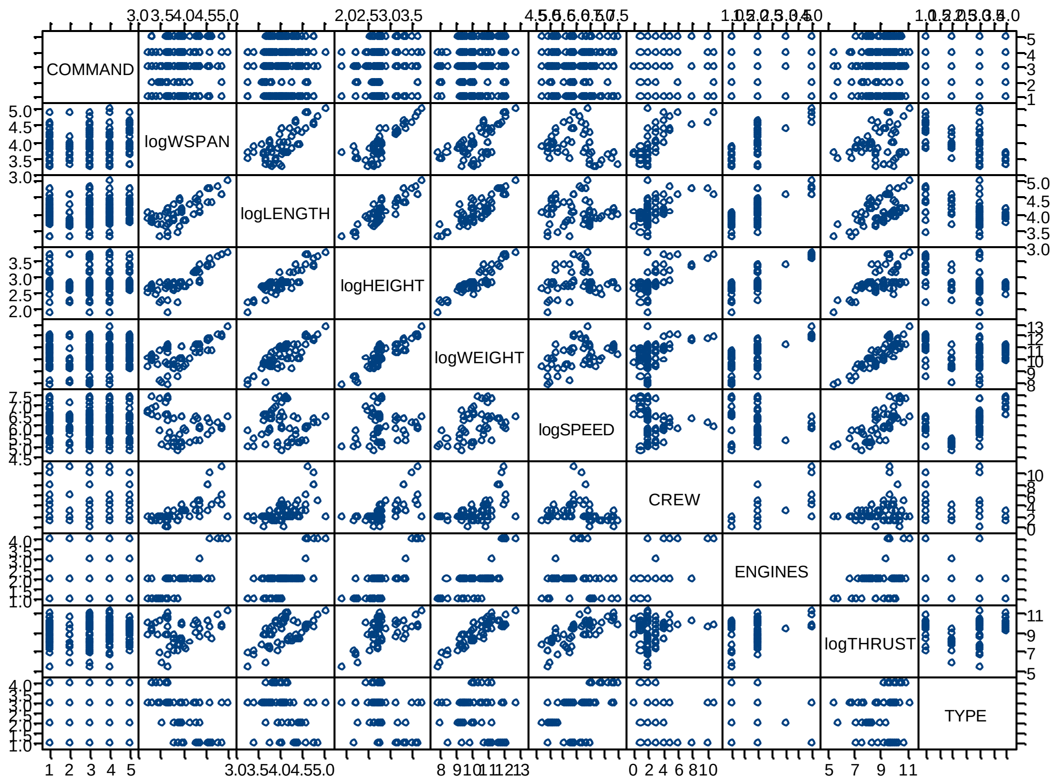


Figure 5.2 The Scatter Plot Matrix of the Independent Variables

After performing the forward inclusion method, the following equation is obtained:

*Ln [Average Cost] = 1.1579 + 0.2307 * Ln[Weight]–15.703 * NET–0.503 * OTHERCOM + 0.5914 * PACFLT –2.27 * RESERV+ 0.83Ln[WingSpan] – 0.3023 * Ln[Height] + 0.7111 * Crew + 0.7664 * Engines + 0.1636 * Ln[Thrust] + 0.537 * (NET * Ln[Weight]) + 0.33 * (OTHERCOM * Ln[Weight]) – 0.033 * (PACFLT * Ln[Weight]) + 0.3319 * (RESERV * Ln[Weight]) + 2.123 * (NET * Ln[WingSpan]) + 1.769 * (OTHERCOM * Ln[WingSpan]) – 0.0544 * (PACFLT * Ln[WingSpan]) + 0.186*

** (RESERV * Ln[WingSpan]) – 0.0283 * (NET * Crew) – 0.0273 * (OTHERCOM * Crew) + 0.05 * (PACFLT * Crew) + 0.0696 * (RESERV * Crew) – 0.0549 * (Crew * Ln[Weight]) – 2.172 * (NET * Engine) – 0.2649 * (OTHERCOM * Engine) – 0.019 * (PACFLT * Engine) – 02212 * (RESERV * Engine) – 0.194 * (Engine * Ln[WingSpan]) + 2.3058 * (NET * Ln[Height]) – 1.8094 * (OTHERCOM * Ln[Height]) – 0.453 * (PACFLT * Ln[Height]) – 0.8186 * (RESERV * Ln[Height])*

(See Appendix G to see the full model, the coefficients of the predictor variables, and their p-values). The forward inclusion method excluded *Type*, *Speed*, and *Length* from the model. The model has a SE of 1.916, which means any prediction of the natural log of the future aircraft O&S cost will be: *estimated value* $\pm$ *standard error* of the predicted value. The R^2 of the regression is 0.7719 meaning a little more than 77% of the variation is explained by the model, and the significance (*p*-value) of the F-statistics is 0.0000, indicating that the log-linear model is a better prediction than the average natural log of cost.

The scatter plots with regression lines in figure 5.3 and Appendix D are representative of the nature of the relationship between the natural log of cost and the natural log of each of the independent variables. These trend lines show that the slopes of the regression lines are not zero. That is, a change of one unit in the natural logarithm of the *X* variable will cause a corresponding increase in the expected value of the natural log of *Y* variable proportional to the coefficient of *X*.

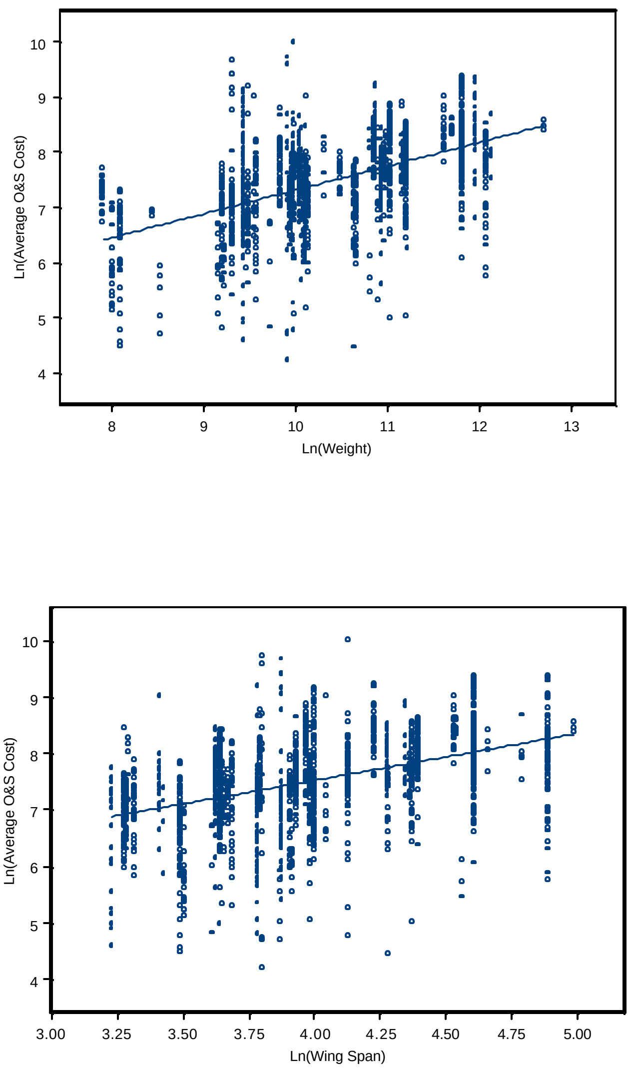


Figure 5.3 Scatter Plots with Regression Line for Two Independent Variables

Although the leverage plots[5.2] [Ref. 18] of the *X* variables in figure 5.4 show that w*ing span* and *height* affect the O&S cost of aircraft, Appendix H depicts that the independent variables *weight, engine numbers,* and *thrust* do not have much effect on the regression in the presence of the other predictor variables. The height of the aircraft has an inversely proportional effect to the model in the presence of the other variables. That is, as the natural logarithm of the height of an aircraft increases one unit, the expected natural logarithm of the average O&S cost actually decreases proportionally. On the other hand a one-unit increase in natural logarithm of *wingspan* and *crew number* increases the natural logarithm of the average O&S cost.

The studentized residuals versus fitted values graph in figure 5.5 indicates an apparent lack of heteroscedasticidity (unequal variances).

The response versus fit plot, also in figure 5.5, shows a reasonably good fit.

[5.2] A leverage plot for variables Y and X_k depicts a regression in which:

The "Y" variable equals the residual from the regression of Y on all X variables except X_k

The "X" variable equals the residual from the regression of X_k on all X variables except X_k [Ref. 18]

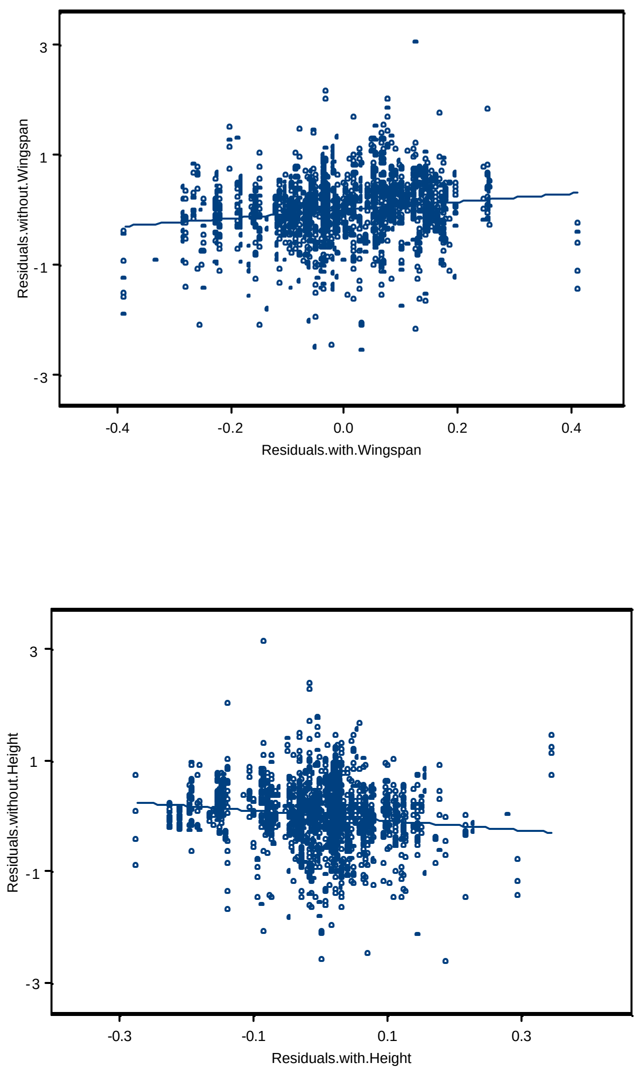


Figure 5.4 Leverage Plots for Two of the Independent Variables

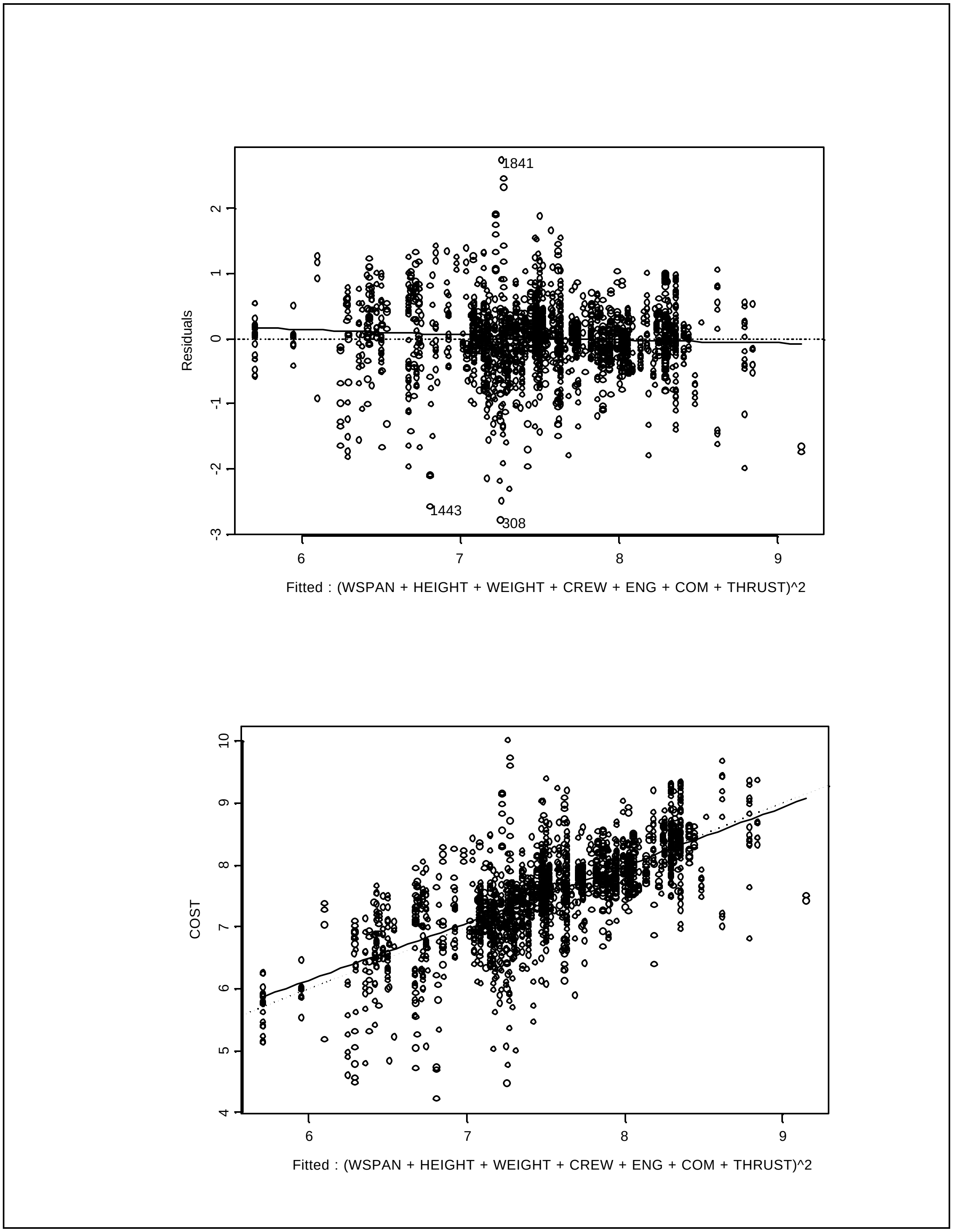


Figure 5.5 Residuals vs. Fitted Values and Response vs. Fitted Values Plots (in Natural Log Scale)

C. CONFIDENCE INTERVALS

The following discussion on confidence intervals is obtained from *Probability and Statistics for Engineering and the Science* prepared by Jay L. Devore, Duxbury Press. In many cases, cost analysts wish to estimate confidence intervals (CI) rather than a single value. Because the predicted value may be quite close to the true value, but will never actually equal it. If the estimator has at least approximately a normal distribution, as in our case, we can be quite confident that the true value lies within 2 or 3 standard deviations of the estimated value. The degree of plausibility will be specified by a confidence level. Rule of thumb for cost estimation community is 80% confidence level. That is, in the long run approximately 80% of the computed CIs will contain the actual mean value m. “To construct a confidence interval around the expected value of Y when $X = X_i$ find

$$\hat{Y}_i \pm t(SE_{\hat{Y}_i})$$

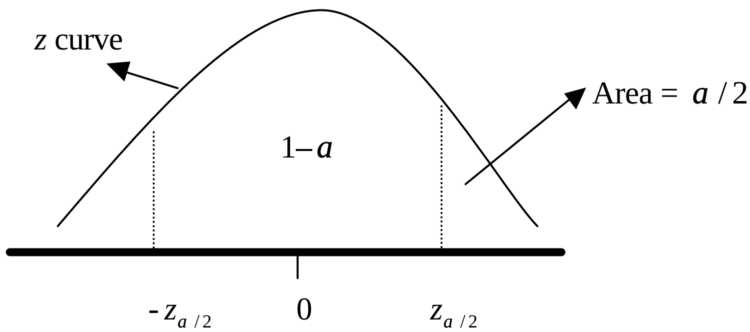
where t is chosen from the theoretical t-distribution, $SE_{\hat{Y}_i}$ is the estimated standard error of the mean value of *Y.*” [Ref. 18]

$$SE_{\hat{Y}_i} = s_e * \sqrt{1/n + \frac{(X_i - \overline{X})^2}{TSS_x}}$$

Since $\frac{(X_i - \overline{X})^2}{TSS_x}$ is a quite small number, and we have a large database, Eq. 5.8 approximately gives the same interval.

$$(\overline{Y} - z_{a/2} * {}^{s}\!/\!_{\sqrt{n}}\ ,\ \overline{Y} + z_{a/2} * {}^{s}\!/\!_{\sqrt{n}}) \qquad \text{Eq} \quad 5.8$$

where $\overline{Y}$ is the sample mean, s is the standard deviation of the mean value, n is the sample size and, $z_{\alpha/2}$ denotes the value on the measurement axis for which $\alpha/2$ of the area under z curve lies right and left of $z_{\alpha/2}$. Thus $z_{\alpha/2}$ is the $100(1-\alpha)$th percentile of the standard normal distribution. (See the chart below) [Ref. 20]



Then a $100(1\ \alpha)\%$ CI for the mean of a normal or approximately normal population is given by

$$\overline{Y} \pm z_{\alpha/2} * s/\sqrt{n} \qquad \text{Eq} \quad 5.9$$

Suppose a cost analyst is asked to provide an average annual O&S cost estimate and approximately 80% CI of a new aircraft by using the multivariate regression model based on historical cost data. The following information is provided:

Log of Wspan	=	3.28
Log of Height	=	2.71
Log of Weight	=	10.11
Crew Number	=	1.00
Engine Number	=	1.00
Log of Thrust	=	9.33
Command	=	LANFLT

Equation 4.1 will be applied to get an estimate of the O&S cost. The predicted value obtained is 7.1859, which corresponds to $1320.67K (FY00)

The CI to the value obtained by the regression model above is:

Lower level: $7.1859 - [1.208*(1.916 / \sqrt{1890})] = 7.133$ [$1252.63K (FY00$)]

Upper level: $7.1859 + [1.208*(1.916 / \sqrt{1890})] = 7.239$ [$1392.7K (FY00)]

The confidence range is probably suitable for effective use, but if the individual O&S cost of each aircraft were available, the interval would be narrower.

VI. TREE-BASED MODELS WITH WEIGHTED MULTIVARIATE REGRESSION

Tree-based models provide an alternative to linear models for regression problems. Tree models are developed by successively splitting the data to form homogeneous subsets. The result is a hierarchial tree of decision rules. Fitting a tree model is a recursive procedure resulting in terminal nodes or “leaves” containing groups of cases with similar values in their independent variables and differences in the dependent variables, which reflect response probabilities.

The procedure begins with a parent node. This node has a “purity measure” with respect to the dependent variable. This purity measure is defined by S-PLUS as deviance, that is,

$$-2 * \sum_{i=1}^{n} (\mathrm{Y}_i - \overline{\mathrm{Y}})^2$$

where $\overline{Y}$ is the mean of the observations and the Y_i is the i^{th} aircraft-TMS. For each node S-PLUS looks at every variable and every possible split within that variable and chooses the variable and split that creates the maximum reduction in deviance at each stage, splitting the node into two child nodes. Each pair (of child nodes) has a combined deviance, which is no greater than that of its parent. [Ref. 22]

Tree-based models often over-fit the data [Ref. 22]. That is, the fit is too good; there is the danger that the model will not perform well when used on other data. To avoid this problem, S-PLUS provides methods to reduce the tree size to an optimal level.

Two commonly used methods are *pruning* and *cross-validation*. Pruning enables the analyst to choose a tree size and cross-validation determines the optimal size of the tree. The optimum size of the tree is identified by computing the cross-validated deviance for every size and choosing the size for which this is the smallest.

A. CONSTRUCTING THE MODEL

To construct the model, the VAMOSC database was first split into two major Commands (sub-sets): *Reserve* and *Non-Reserve*. In addition, each TMS for each command was categorized into the four previously defined major groups:

- Attack / Fighter
- Rotary-Wing
- Cargo / Utility
- Other

Three independent parameters, *weight*, *length*, and *thrust* were selected as the predictor parameters due to their presumed relationship with the O&S cost.

1. Tree-Based Model for Non-Reserve Aircraft

The cross-validation method was applied to the non-reserve aircraft O&S cost database. Cross-validation identified an optimal tree with 51 terminal nodes, and residual mean deviance of 2.359. The *mean deviance* is regarded as the variance of the predicted value. The *standard error* of the model will then be the square root of 2.359, that is, 1.536. Figure 6.1 displays the 51-node tree-based model and the S-PLUS output for this model weighting on *quantity* is as follows:

Regression tree:
tree(formula = LOGAVGCOST ~ logLENGTH + logWEIGHT + logTHRUST, data = NONRESERVE, weights = QUANTITY, na.action = na.exclude, mincut = 5, minsize = 10, mindev = 0)
Number of terminal nodes: 51
Residual mean deviance: 2.359 = 3664 / 1553

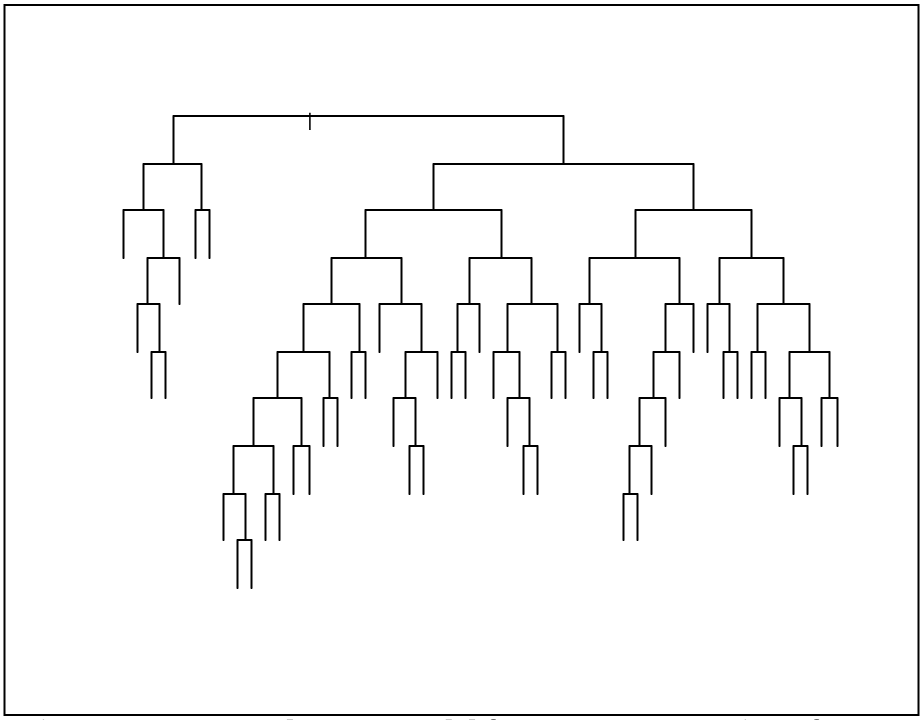


Figure 6.1 A 51-Node Tree Model for Non-Reserve Aircraft-TMS

Since a model with 51 nodes is quite complicated and difficult to use, the tree sizes and residual mean deviance was analyzed to see whether an alternative tree with similar deviance and predictive power but fewer terminal nodes existed. Figure 6.2 displays the relationship between deviance and model size. The difference in deviance between the 51-node tree and the 10-node tree is 1.651 – 1.536 = 0.115. While the 10-node tree is not as good as the 51-node tree, the difference in deviance between two the models is not substantial. Moreover, it is easier to interpret and use a tree which has 10 nodes than one with 51 nodes. This trade-off will be accepted and the study will proceed with a 10-node tree model.

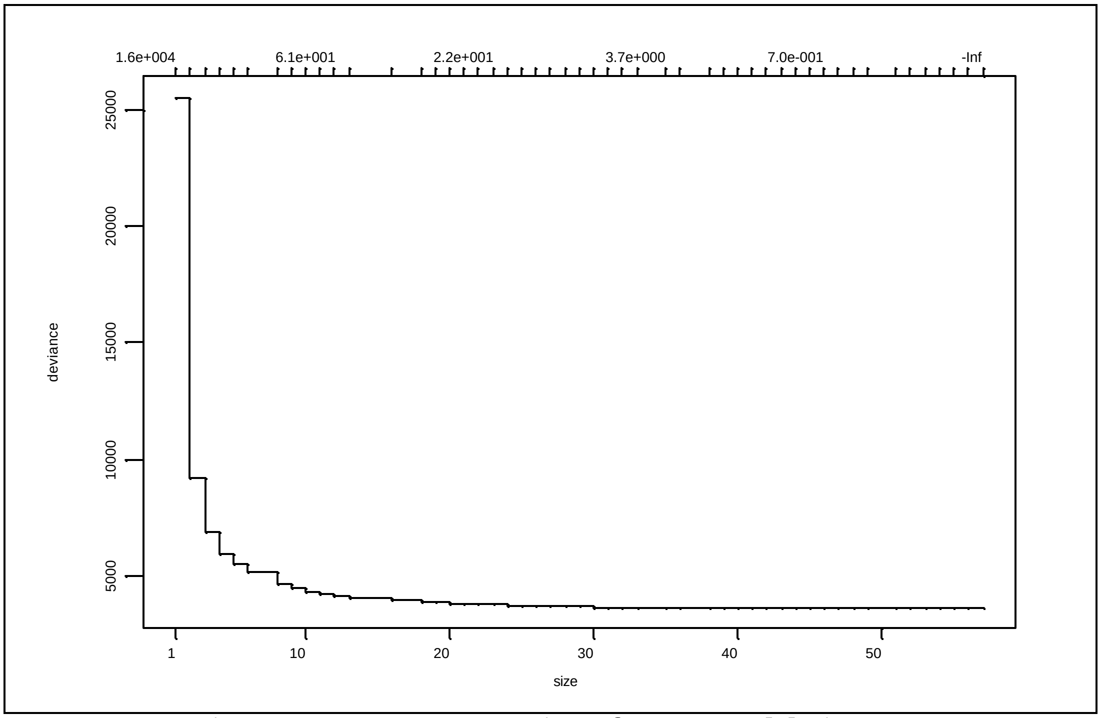


Figure 6.2 Non-Reserve Aircraft Tree Model Size

Figure 6.3 and Appendix I depict 10-node tree-based models for the four previously determined aircraft categories.

Suppose a cost analyst is asked to provide an average O&S cost estimate and approximately 80% confidence interval of a new aircraft in a non-reserve command by using a tree model based on the historical cost data. The following information is provided:

Log of Length = 3.7
Log of Weight = 10.11
Log of Thrust = 9.33
Type of Aircraft = Attack / Fighter

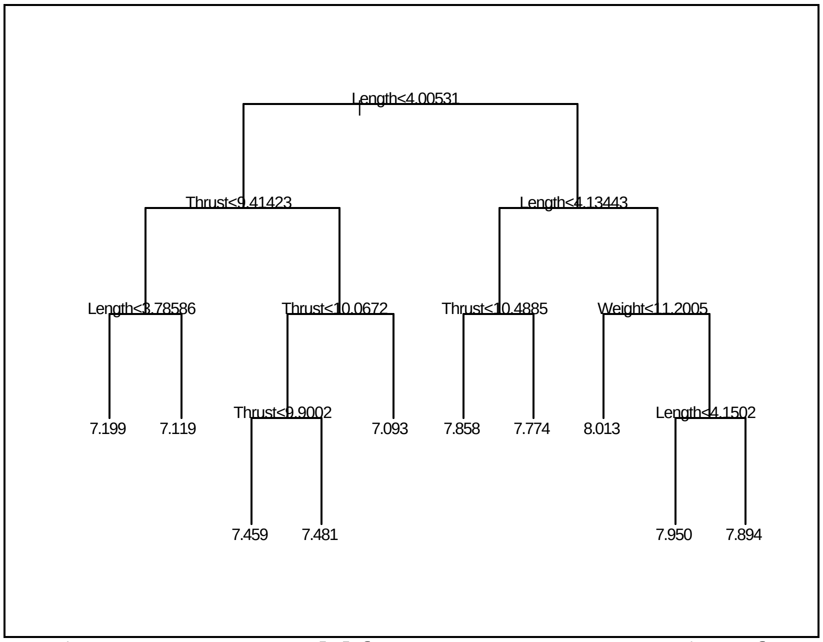


Figure 6.3 Tree Model for Non-Reserve A / F Aircraft TMS (in Natural Log Scale)

The algorithm proceeds as follows:

Start the loop
Repeat {
If the stated condition is true then
go to left branch
}
Stay in the loop until current node is a leaf
End

The given algorithm is applied to the three independent variables. In this example, the predicted natural logarithm of the O&S cost of a future aircraft will be 7.199 corresponding to 1339.43 FY00$K with a residual *mean deviance* of 2.055. The *mean deviance* is regarded as the estimated variance of the predicted value. The standard error of the model will then be the square root of 2.055. That is 1.434.

After finding the estimate for the O&S cost, a confidence interval with approximately 80% confidence is computed. Equation 5.9 is applied to the model. The interval is as follows:

Lower level: $7.199 - [1.208*(1.434 / \sqrt{346})] = 7.106$ [$1468.5K (FY00)]

Upper level: $7.199 + [1.208*(1.434 / \sqrt{346})] = 7.292$ [$1219.3K (FY00)]

The confidence range is broader than the multivariate regression model. But approximately 80% of the times the actual mean value of the O&S costs will be within this interval.

2. Tree-Based Model for Reserve Aircraft

The same independent variables and aircraft categories were then analyzed to get a tree-based model for reserve aircraft O&S costs. There are fewer observations for the four *reserve* aircraft categories, so, not surprisingly, the trees tend to have fewer leaves. In this case, instead of reducing the node sizes, the optimal cross-validation results will be used to find the estimate. Cross-validation identified an optimal tree with 7 terminal nodes for the reserve *attack/fighter* aircraft and the tree model regression output is as follows:

Regression tree:

tree(formula = logAVGCOST ~ logTHRUST + logLENGTH + logWEIGHT, data = restactical, weights = QUANTITY, minsize = 2, mindev = 0)
Number of terminal nodes: 7
Residual mean deviance: 2.995 = 185.7 / 62

Figure 6.4 displays the relationship between deviance and the model size. The deviance as depicted in figure 6.4 is almost flat once the model size is 7 nodes and above. (See Appendix J for the regression trees, and tree models of the other three aircraft

categories.) The reserve attack/fighter aircraft tree model is displayed in figure 6.5. This tree was used for the ensuing analysis.

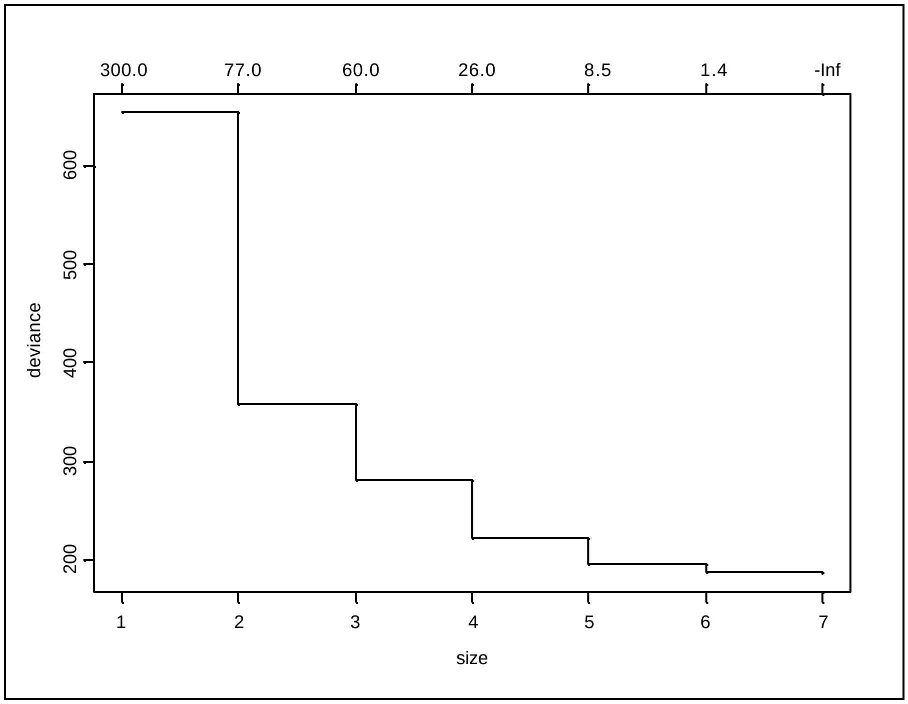


Figure 6.4 Reserve Attack/Fighter Aircraft Tree Model Size

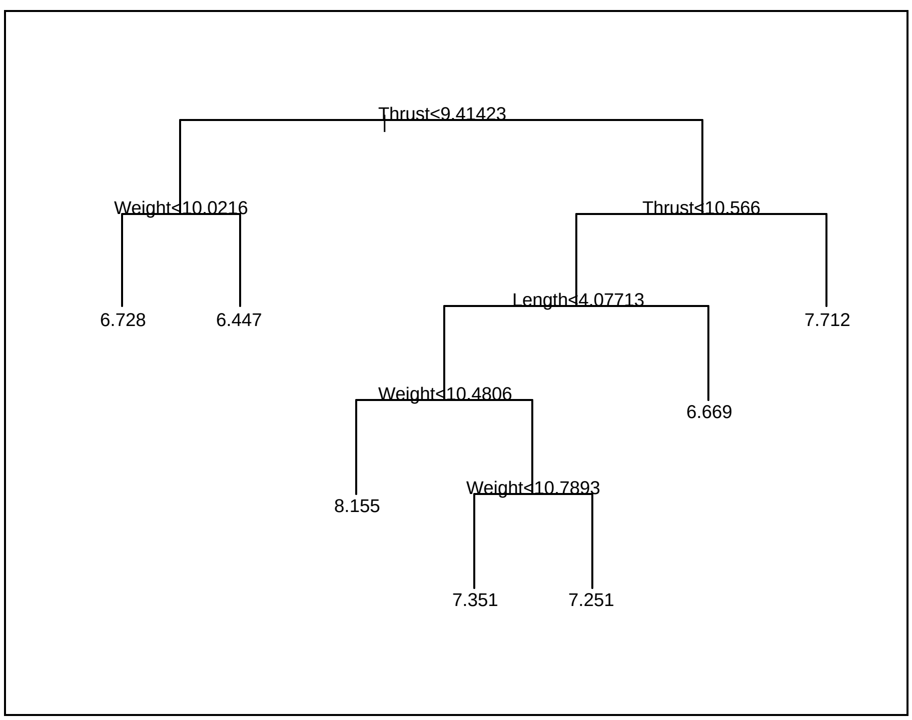


Figure 6.5 Tree Model for Reserve A / F Aircraft TMSs (Ln Scale)

Again, suppose a cost analyst is asked to provide an average O&S cost estimate and approximately 80% confidence interval of a new aircraft in a *reserve command* by using a tree model based on the historical cost data. The following information is provided:

Log of Length = 3.7
Log of Weight = 10.11
Log of Thrust = 9.33
Type of Aircraft = attack / fighter

The predicted natural logarithm of O&S cost of a future aircraft will then be 6.447, corresponding to $630.8K (FY00) with a residual mean deviance of 2.995 (SE = 1.717).

After finding an estimate for *attack/fighter* aircraft O&S cost, approximately 80% confidence interval is computed. Equation 5.8 is applied to the model. The interval is:

Lower level: $6.447 - [1.208 * (1.717/\sqrt{69})] = 6.198$ [$491.52K (FY00)]

Upper level: $6.447 + [1.208 * (1.717/\sqrt{69})] = 6.697$ [$809.57K (FY00)]

Again, the confidence interval is quite broad.

THIS PAGE INTENTIONALLY LEFT BLANK

VII. UNIVARIATE REGRESSION MODEL

Given the complicated nature of the previous two estimating methodologies, the final step for this thesis is to come up with a rough-order-of-magnitude cost estimating model using univariate regression. Often, managers do not have access to advanced statistical software. Furthermore, managers frequently do not possess deep statistical knowledge but are still required to predict the O&S costs of future aircraft. A simple model is needed in such times. Ordinary least squares (OLS) provides a simple basis for this type of cost estimating analysis. The dependent variable, natural log of the average total annual O&S cost, was calculated by aircraft-TMS from FY87 to FY98. Three independent parameters *weight*, *length*, and *thrust* were selected as the predictor variables due to their presumed relationship with O&S cost.

Since the O&S cost of *reserve* aircraft tend to be different than *non-reserve* aircraft, the data were split into two major categories called *reserve* and *non-reserve* aircraft. Further, those two categories were divided into four sub-categories shown below:

- Attack / Fighter (A / F)
- Rotary Wings (HELO)
- Cargo / Utility (C / U)
- Other (OTH)

Figure 7.1 illustrates the methodology of the proposed univariate parametric cost model.

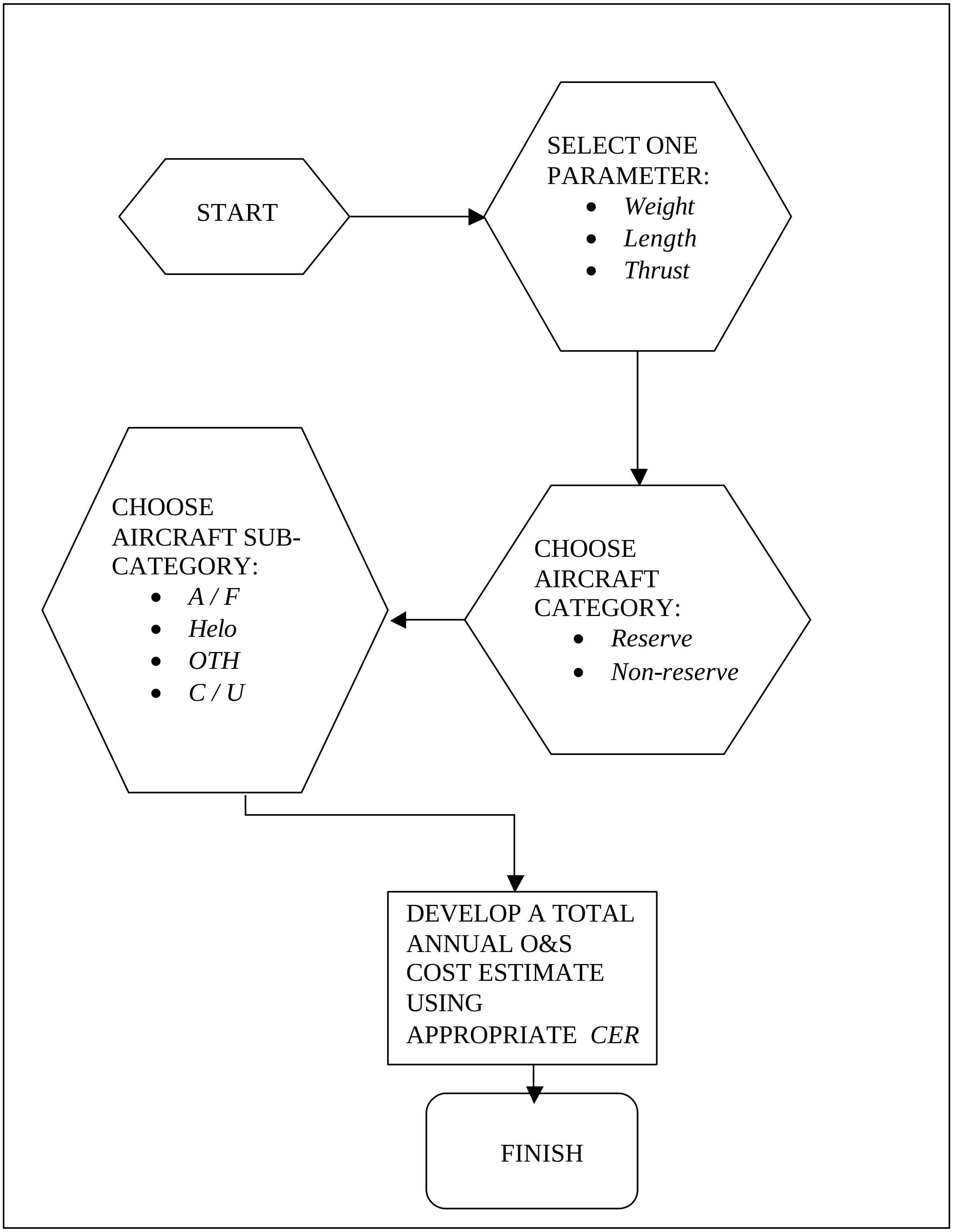


Figure 7.1 Flow Chart for the Total Annual Cost Model Methodology

A. COST ESTIMATING RELATION (CER) #1: WEIGHT

Weight describes the maximum take off weight of an aircraft in *pounds* (*lbs.*) under full combat load condition.

As mentioned in *Chapter IV*, natural logarithm transformations of the data will be used to develop the models. The non-reserve attack/fighter sub-category will be illustrated in detail. (To see the other sub-category estimates, refer to Appendix K).

Figure 7.2 depicts the best-fit line and table 7.1 displays the summary of the regression output in terms of a multiplicative model.

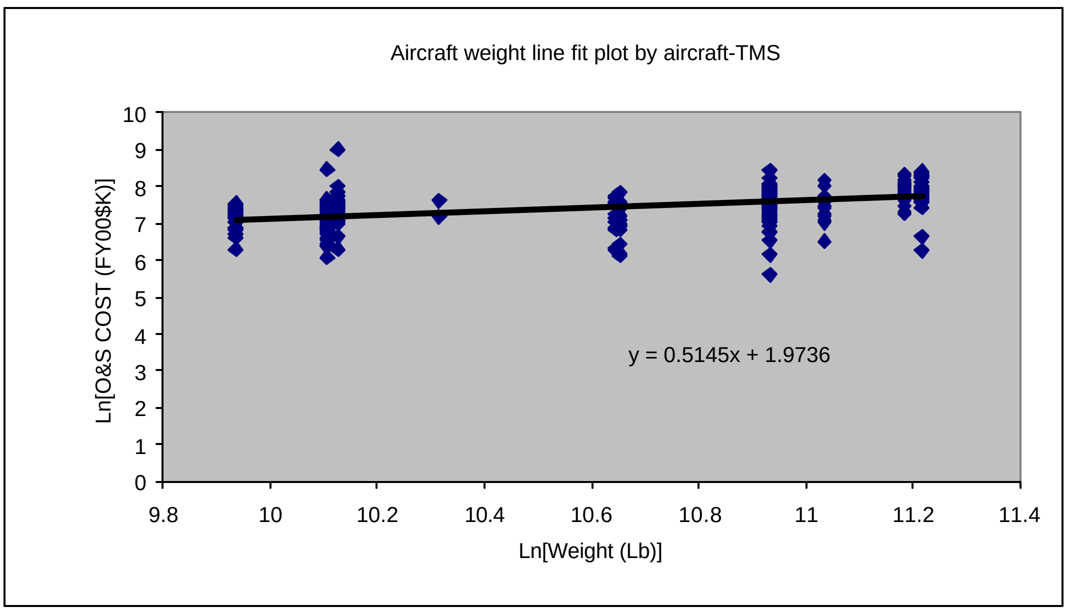


Figure 7.2 OLS Regression Best-Fit Line for Ln [Average Annual Total O&S Cost] vs. Ln [Aircraft Weight]

I. Model Form and Equation

Model Form: **Log-Linear Model**

Number of Observations: 345

Equation in Unit Space: Cost = 7.196 * weight ^ 0.515

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	1.974	0.554	3.563	0.0004
Weight	0.515	0.052	9.929	0.0000

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.426	22.30%	22.10%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Significance
Regression (SSR)	1	17.907	17.907	98.59	0.0000
Residuals (Errors) (SSE)	343	62.301	0.182		
Total (SST)	344	80.208			

Pairwise Correlation Matrix

	LN(Cost)	LN(weight)
LN(Cost)	1.000	0.483
LN(weight)	0.483	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	1950.340		
Standard Error (SE)	808.302	53.14%	-34.70%
Coefficient of Variation (CV)	41.40%		
Adjusted R-Squared	18.80%		

Table 7.1 Summary Output of OLS Regression on Aircraft Weight CER

Even though the predictive measures have poor statistics (R_a^2 of 0.188 and *CV* of 0.41), the significance of the *F-statistic*, at 0.0000, indicates that *weight* is a reasonable predictor of total O&S cost. Consequently the model is preferred to simply using the mean of the population.

Moreover, a quick look at the residuals of the model in figure 7.3 shows no evidence of heteroscedasticity.

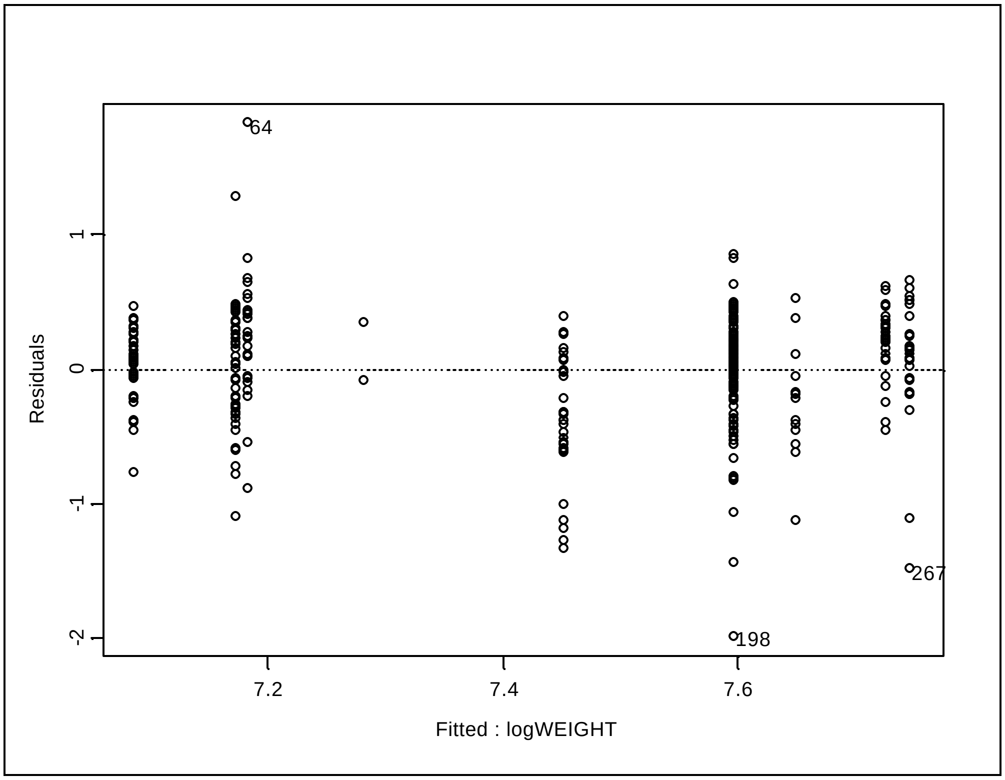


Figure 7.3 Scatter Plot of Residuals for Natural Log of Weight

A multiplicative CER is the result of using the natural logarithm of the data. A change in the independent variable causes a similar change to the dependent variable by an amount proportional to the change in the independent variable. This relation may be stated as follows:

$$\hat{Y} = \mathrm{AX}^{b} \qquad \text{Eq} \quad 7.1$$

where $\hat{Y}$ is the predicted average annual total O&S cost and X is the maximum take off weight of a given aircraft.

This equation is arrived at through the following: OLS regression is performed on the transformed data to get an equation of the form

$$\hat{Y}' = b_0 + b_1\mathrm{X}' \qquad \text{Eq} \quad 7.2$$

where $\hat{Y}'$ = ln ($\hat{Y}$), X' = ln (X). Eq. 7.2 is then transformed into a unit space as follows:

$$e^{\hat{Y}'} = e^{b_0 + b_1\mathrm{X}'}$$

$$\hat{Y} = e^{b_0} e^{b_1\mathrm{X}'}$$

$$\hat{Y} = \mathrm{AX}^{b}$$

where e^{b_0} is the estimate for the parameter A in equation 7.1 and b_0 is the estimate for b in equation 7.1. [Ref. 3]

Figure 7.2 depicts that the equation of the prediction line is

$$\hat{Y}' = 0.5145X + 7.196$$

When transformed from natural logarithm space to unit space, the equation above becomes a multiplicative model as follows:

$$\hat{Y} = 7.196X^{0.5145}(\text{FY00\$K}) \qquad \text{Eq 7.3}$$

where X is the maximum take off weight (in pounds).

1. Confidence Intervals

The free software *Costat97.XLS*, an *Excel*® *macro* [Ref. 23] developed by LCDR Tim Anderson, is used to perform univariate regression. Table 7.1 is the usual output of this program. In this output *sub-section III* depicts the upper and lower boundaries of the *standard error*. SE of the model is 808.3 and the average predicted value of Y is 1950.34 FY00\$K. The boundaries of SE vary between 53.14% and –34.7% of the predicted value for cost.

For example, suppose one wants to estimate the annual O&S cost of a non-reserve attack / fighter aircraft with a weight of 50,000 lbs. From Eq. 7.3 the estimated cost would be $1882.4K (FY00). The one-standard error lower and upper confidence interval levels would then be as follows:

Lower level: 1882.4K – (0.347 * 1882.4) = $1229.2K (FY00)

Upper level: 1882.4K + (0.531 * 1882.4) = $2881.9K (FY00)

Again, the confidence interval is quite large, however this type of model is much easier to use.

B. COST ESTIMATING RELATION (CER) #2: THRUST

The method of approach to derive a *CER* for aircraft *thrust* is similar to that for aircraft maximum take off weight. Thrust represents the power of the aircraft engine in *static thrust pound* (st lb) units. As seen in figure 7.4, the natural logarithm of thrust and natural logarithm of O&S cost appear to have a linear relationship with each other.

The residuals versus the fitted values graph in figure 7.5 also seems normal and it appears to be free of unequal variances.

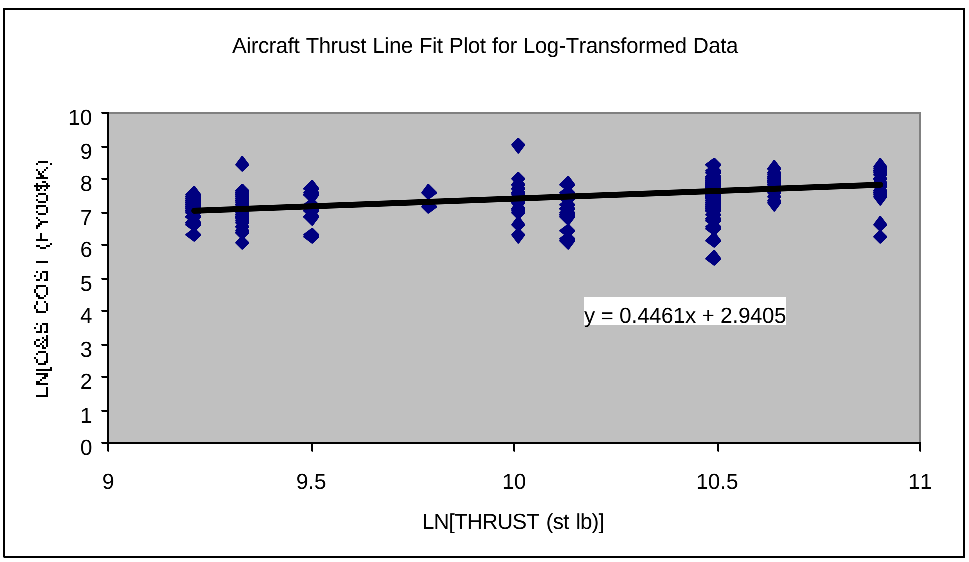


Figure 7.4 OLS Regression Best-Fit Line for Aircraft Thrust CER Model Using Log-Transformed Data

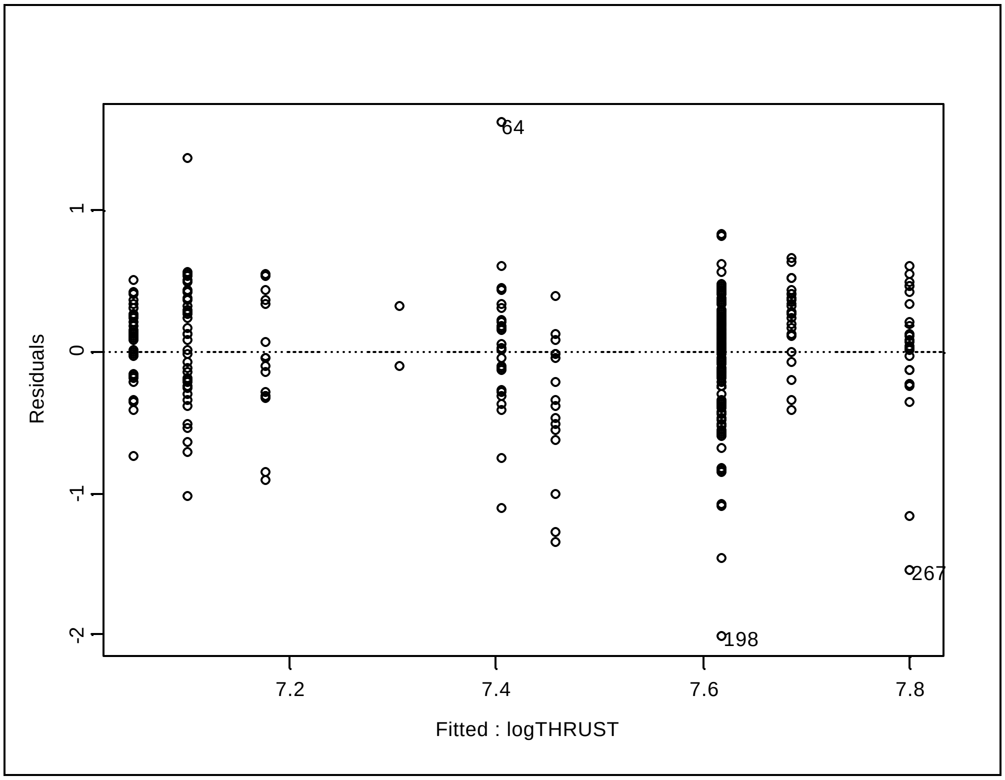


Figure 7.5 Residuals vs. Fitted Values Graph

The log-linear CER model depicted in table 7.2 has R^2 of 0.226, *CV* of 0.405, and SE of 789.076. Even though those values are not great, the significance of the F-statistics indicates that a log-linear model based on *thrust* is a better prediction than the average.

The prediction line in figure 7.4 is

$$\hat{Y}' = 0.446X + 2.9405$$

the equation displayed above is in natural logarithm space, when transformed into unit space, the following multiplicative model is obtained

$$\hat{Y} = 18.959 * X^{0.446} \qquad \text{Eq} \quad 7.4$$

where *X* is *thrust* of aircraft. (in st. lb.)

I. Model Form and Equation

Model Form: **Log-Linear Model**
Number of Observations: 345
Equation in Unit Space: Cost = 18.959 * Thrust ^ 0.446

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	2.942	0.407	7.226	0.0000
Thrust	0.446	0.040	11.133	0.0000

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV(Coeff of Variation)
0.414	26.50%	26.30%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	21.29	21.29	123.943	0.00
Residuals (Errors) (SSE)	343	58.918	0.172		
Total (SST)	344	80.208			

Pairwise Correlation Matrix

	LN(Cost)	LN(Thrust)
LN(Cost)	1.000	0.512
LN(Thrust)	0.512	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	1950.340		
Standard Error (SE)	789.076	51.35%	-33.93%
Coefficient of Variation (CV)	40.50%		
Adjusted R-Squared	22.60%		

Table 7.2 Summary Output of OLS Regression on Aircraft Thrust CER

1. Confidence Intervals

To obtain the upper and lower confidence boundaries of the predicted value of O&S cost, *Costat97.XLS* output in table 7.2 will be used. The upper and lower boundaries of SE vary between 51.35% and –33.93% of the predicted value for cost.

Suppose a cost analyst is asked to provide an average annual O&S cost estimate for a non-reserve attack/fighter with a thrust of 16000 st. lb. Applying the Eq. 7.4 will give the following result:

$$\hat{Y} = 18.959 * 16000^{0.446} = \$1421.85K \quad \text{(FY00)}$$

The confidence interval to $\hat{Y}$ will be as follows:

Lower level: 1421.85 – (-0.3393*1421.85) = $939.42K (FY00)

Upper level: 1421.85 – (0.5135*1421.85) = $2151.96K (FY00)

The confidence interval is still fairly large.

C. COST ESTIMATING RELATION (CER) # 3: Aircraft Length

The length of aircraft is considered to be the overall length of aircraft measured in feet. The scatter plot in figure 7.6 shows that there appears to be a linear relationship between length and the average annual total O&S cost. In addition to this result, the residuals versus fitted values plot in figure 7.7 seems free of heteroscedasticity.

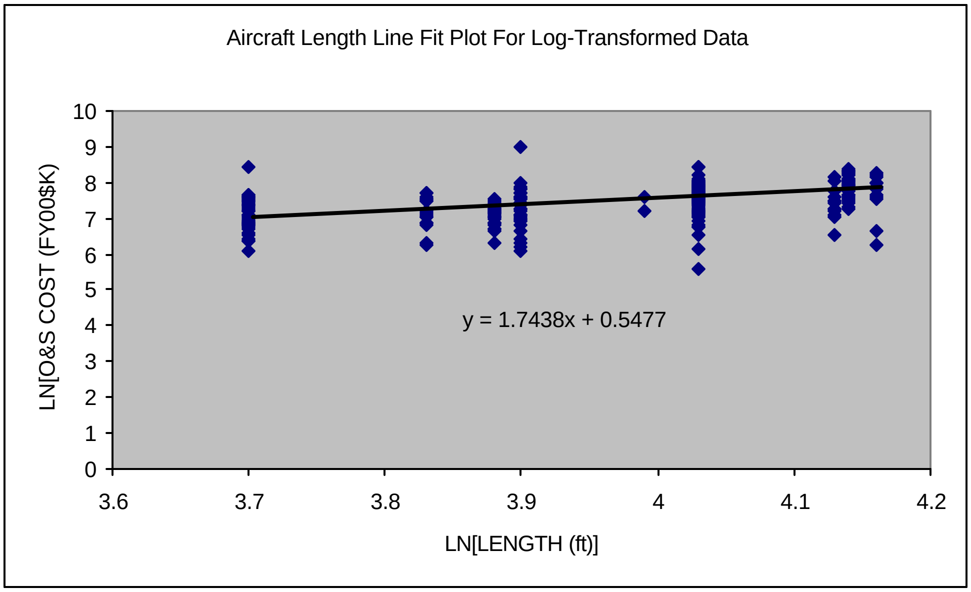


Figure 7.6 OLS Regression Best Fit Line for Aircraft Length CER Model Using Log-Transformed Data

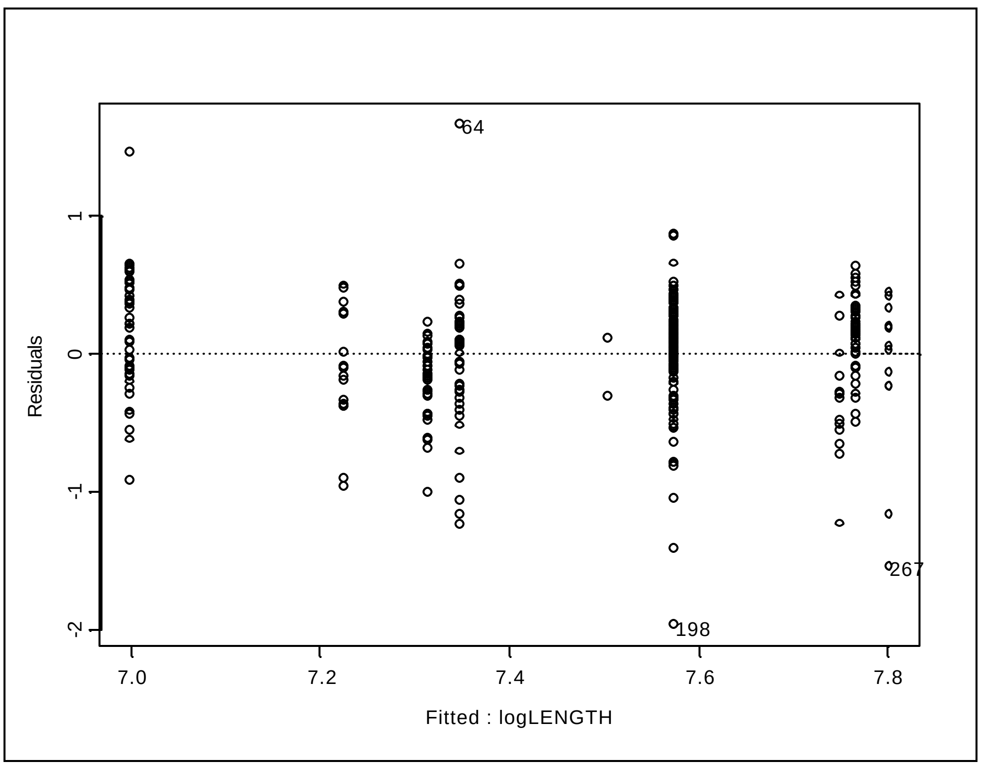


Figure 7.7 Residuals vs. Fitted Values Graph

The log-linear *CER* model for *length* summarized in table 7.3 shows an approximate 21 percent *coefficient of determination* (R^2) and 41 percent *coefficient of variation*. The significance of the F-statistics indicates that a log-linear model based on *length* is a better prediction than the average.

As indicated on the graph in figure 7.6 that the equation of the prediction line is

$$\hat{Y}' = 1.7438X + 0.5477$$

when the model above is transformed into unit space, the multiplicative equation below is derived

$$\hat{Y} = 1.808 * X^{1.734}\,(\text{FY00\$K}) \qquad \text{Eq} \quad 7.5$$

where X is the overall length of an aircraft (in feet).

1. Confidence Intervals

To obtain the upper and lower boundaries of the predicted value of O&S cost, *Costat97.XLS* output in table 7.3 will be used. The upper and lower boundaries of *SE* varies between 52.14% and –34.27% of the estimated average cost.

By using Eq 7.5 the estimated average annual O&S cost obtained from a non-reserve attack/fighter having a length of 40 ft. is $1084.35K (FY00). Approximately 80% confidence interval to $\hat{Y}$ will be as follows:

Lower level: 1084.35 – (0.3427 * 1084.35) = $712.74K (FY00)

Upper level: 1084.35 + (0.5214 * 1084.35) = $1649.73K (FY00)

The prediction interval is again quite large.

I. Model Form and Equation

Model Form: **Log-Linear Model**

Number of Observations: 345

Equation in Unit Space: Cost = 1.808 * Length ^ 1.734

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	0.592	0.649	0.913	0.3619
Length	1.734	0.163	10.606	0.0000

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.420	24.70%	24.50%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	19.807	19.807	112.482	0.000
Residuals (Errors) (SSE)	343	60.4	0.176		
Total (SST)	344	80.208			

Pairwise Correlation Matrix

	LN(Cost)	LN(Length)
LN(Cost)	1.000	0.486
LN(Length)	0.486	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	1950.340		
Standard Error (SE)	797.840	52.14%	-34.27%
Coefficient of Variation (CV)	40.90%		
Adjusted R-Squared	20.90%		

Table 7.3 Summary Output of OLS Regression on Aircraft Length CER

VIII. CONCLUSIONS AND RECOMMENDATIONS

The results of the two parametric O&S cost models, the univariate model and the multivariate model, showed that that O&S costs of future aircraft acquisitions are not well-modeled by the physical and performance parameters identified in this study. While physical and performance variables influence the O&S costs, they do not adequately explain the costs. Though these models are not very precise, they can provide decision makers a tool for estimating a rough-order-of-magnitude total annual O&S cost for a future US Navy aircraft backed up by historical data.

The tree-based regression model gave more useful and more reliable results than the univariate and multivariate regression models, and the single variable models produced the simplest results.

The tree-based model, for many reasons, is the best model when estimating the O&S costs. It is a simple and reliable model. Although the multivariate model appears to produce the best estimates, its complexity hinders its widespread application. The univariate model has the advantage of ease of use, yet its poor estimating performance is the main reason why it should not be used. In reality no model is perfect. Cost estimators; however, should use the tree-based model, when estimating the O&S costs of future US Navy aircraft.

The assumption mentioned in Chapter IV, that *the weighted average annual O&S cost for any aircraft-TMS is constant over time: does not systematically increase or decrease from year to year* was shown to be invalid in some cases. In those cases when the assumption did not hold, the historic costs tended to decrease over time. Further analysis is recommended to determine the reason for such cost behavior.

Since the data contained aggregate, rather than individual O&S costs, weighted least squares regression was used to produce cost estimating relationships. However, this resulted in wider confidence intervals than would have been seen if more granular data had been available. Therefore, the collection of individual aircraft O&S cost data is recommended.

APPENDIX A. SAMPLE OF RAW VAMOSC DATA

FY87-98 ATMSR Data, Escalated to FY00 dollars, Costs in $K

1998					
TMS	**Element #**	**Element Description**	**LANFLT**	**MARINE**	**MIS**
AH-1W	1.0	Subtotal Organizational	37635.70		
AH-1W	2.0	Intermediate Costs	10773.20		
AH-1W	3.0 (87-91)	Subtot Depot Support FY87-91	0.00		
AH-1W	3.0 (92->)	Subtot Depot Support FY92->	6128.00		
AH-1W	4.0	Subtot Training Support	281.90		
AH-1W	5.0 (87-91)	Subtot Recurring Investment FY87-91	0.00		
AH-1W	5.0 (92->)	Subtot Recurring Investment FY92->	9974.60		
AH-1W	6.0	Other Functions	455.10		
AH-1W	A.1	Total Aircraft Number	41.00		
AH-1W	A.2	Total Flying Hours	7613.00		
AV-8B	1.0	Subtotal Organizational	82791.50		
AV-8B	2.0	Intermediate Costs	1228.80		
AV-8B	3.0 (87-91)	Subtot Depot Support FY87-91	0.00		
AV-8B	3.0 (92->)	Subtot Depot Support FY92->	14123.80		
AV-8B	4.0	Subtot Training Support	14183.60		
AV-8B	5.0 (87-91)	Subtot Recurring Investment FY87-91	0.00		
AV-8B	5.0 (92->)	Subtot Recurring Investment FY92->	8596.40		
AV-8B	6.0	Other Functions	896.80		
AV-8B	A.1	Total Aircraft Number	62.00		
AV-8B	A.2	Total Flying Hours	11050.00		
C-130T	1.0	Subtotal Organizational			
C-130T	2.0	Intermediate Costs			
C-130T	3.0 (87-91)	Subtot Depot Support FY87-91			
C-130T	3.0 (92->)	Subtot Depot Support FY92->			
C-130T	4.0	Subtot Training Support			
C-130T	5.0 (87-91)	Subtot Recurring Investment FY87-91			
C-130T	5.0 (92->)	Subtot Recurring Investment FY92->			
C-130T	6.0	Other Functions			

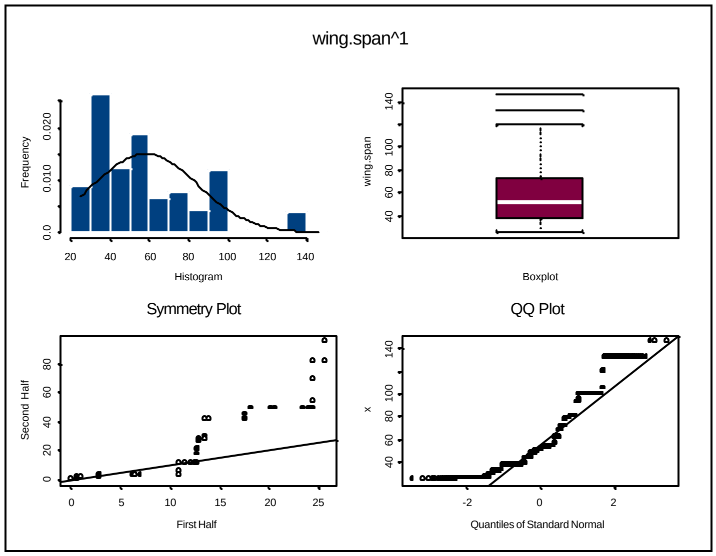
NAVEUR	NET	PACFLT	RESERV	TOTAL
		89316.40	10720.70	137672.80
		22709.40	7043.90	40526.50
		0.00	0.00	0.00
		16142.20	440.30	22710.50
		27506.30	0.00	27788.20
		0.00	0.00	0.00
		26274.70	9244.70	45494.00
		1198.70	421.80	2075.60
		108.00	38.00	187.00
		22145.00	6267.00	36025.00
		62929.60		145721.10
		4889.30		6118.10
		0.00		0.00
		18224.20		32348.00
		204.70		14388.30
		0.00		0.00
		11092.20		19688.60
		1157.20		2054.00
		80.00		142.00
		15845.00		26895.00
			47447.10	47447.10
			5818.20	5818.20
			0.00	0.00
			341.60	341.60
			467.40	467.40
			0.00	0.00
			1045.20	1045.20
			474.90	474.90

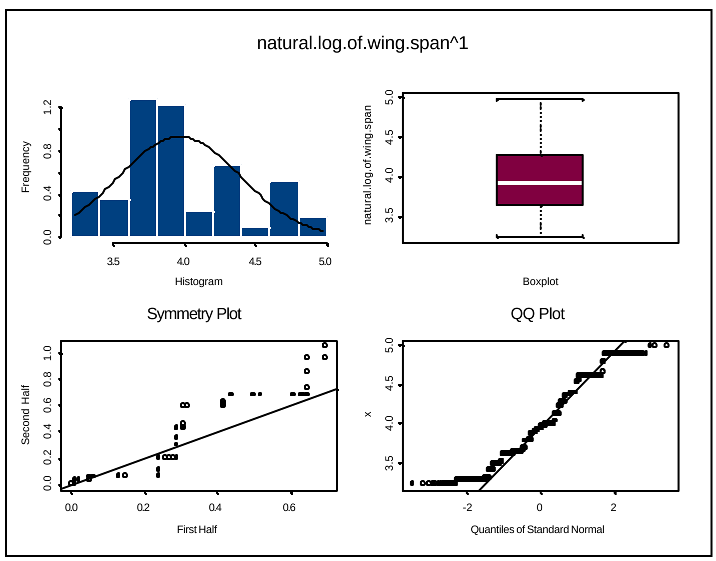
APPENDIX B. LIST OF US NAVY AIRCRAFT CATEGORIES AFTER REGRESSION ANALYSIS

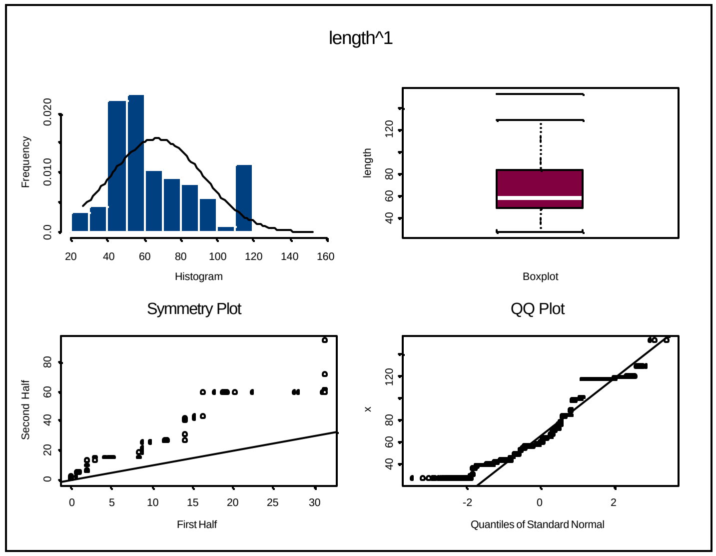
AIRCRAFT CATEGORY	AIRCRAFT-TMS	AIRCRAFT CATEGORY	AIRCRAFT-TMS
Attack/Fighter	A-4E	Helo	AH-1J
Attack/Fighter	A-4F	Helo	AH-1W
Attack/Fighter	A-4M	Helo	CH-46D
Attack/Fighter	A-7B	Helo	CH-46E
Attack/Fighter	A-7C	Helo	CH-53A
Attack/Fighter	A-7E	Helo	CH-53E
Attack/Fighter	AV-8B	Helo	HH-1K
Attack/Fighter	F/A-18A	Helo	HH-1N
Attack/Fighter	F/A-18B	Helo	HH-3A
Attack/Fighter	F/A-18C	Helo	HH-46D
Attack/Fighter	F/A-18D	Helo	HH-60H
Attack/Fighter	F-14A	Helo	MH-53E
Attack/Fighter	F-14B	Helo	SH-2G
Attack/Fighter	F-14D	Helo	SH-3D
Attack/Fighter	F-16N	Helo	SH-3G
Attack/Fighter	F-21A	Helo	SH-60B
Attack/Fighter	F-4J	Helo	SH-60F
Attack/Fighter	F-4S	Helo	TH-1L
Attack/Fighter	F-5E	Helo	TH-57A
Attack/Fighter	F-5F	Helo	TH-57B
		Helo	TH-57C
		Helo	UH-1E
		Helo	UH-1N
		Helo	UH-3A
		Helo	UH-3H
		Helo	UH-46D
		Helo	VH-1N
		Helo	VH-3A
		Helo	VH-3D
		Helo	VH-60A
		Helo	VH-60N

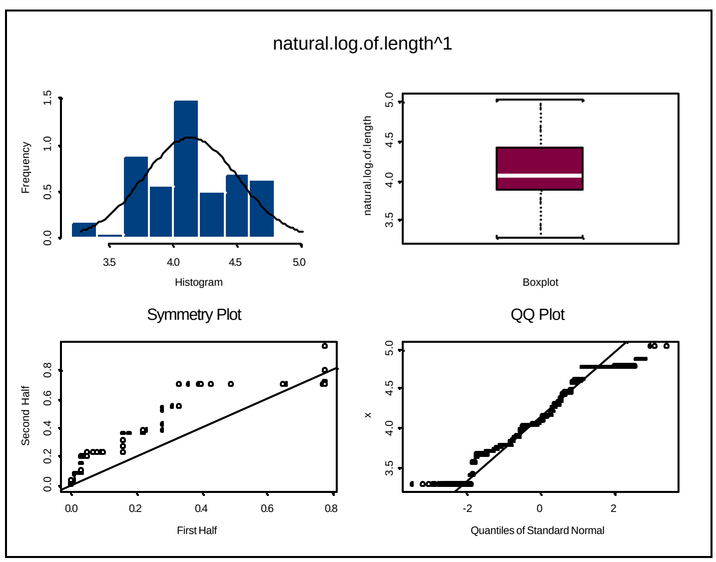
AIRCRAFT CATEGORY	AIRCRAFT-TMS	AIRCRAFT CATEGORY	AIRCRAFT-TMS
Cargo/Utility	C-130T	Other	E-2C
Cargo/Utility	C-131-H	Other	EA-3B
Cargo/Utility	C-20D	Other	EA-4F
Cargo/Utility	C-20G	Other	EA-6A
Cargo/Utility	C-2A	Other	EA-6B
Cargo/Utility	C-9B	Other	EA-7L
Cargo/Utility	CT-39E	Other	EC-130Q
Cargo/Utility	CT-39G	Other	EP-3A
Cargo/Utility	DC-9B	Other	EP-3B
Cargo/Utility	KA-3B	Other	EP-3E
Cargo/Utility	KA-6D	Other	EP-3J
Cargo/Utility	KC-130F	Other	ERA-3B
Cargo/Utility	KC-130T	Other	ES-3A
Cargo/Utility	U-6A	Other	NT-34C
Cargo/Utility	UC-12B	Other	O-2A
Cargo/Utility	UC-12F	Other	OA-4M
Cargo/Utility	UC-12M	Other	OV-10A
Cargo/Utility	UC-880	Other	OV-10D
Cargo/Utility	UC-8A	Other	P-3A
Cargo/Utility	UP-3B	Other	P-3B
Cargo/Utility	VP-3A	Other	P-3C
		Other	QF-4N
Other	TE-2C	Other	QF-86F
Other	TF-16N	Other	RC-12F
Other	TP-3A	Other	RC-12M
Other	RF-4B		
Other	RP-3A		
Other	RP-3D		
Other	S-3B		
Other	T-2B		
Other	T-2C		
Other	T-34B		
Other	T-34C		
Other	T-38A		
Other	T-38B		
Other	T-39D		
Other	T-44A		
Other	T-45A		
Other	TA-3B		
Other	TA-4F		
Other	TA-7C		
Other	TAV-8B		
Other	TC-130G		
Other	TC-18F		
Other	TC-4C		

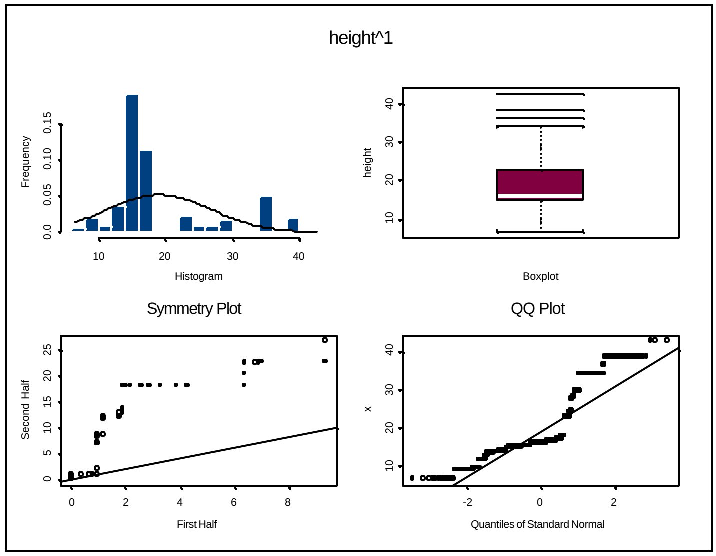
APPENDIX C. HISTOGRAMS, BOXPLOTS, SYMMETRY PLOTS AND QQ PLOTS FOR INDEPENDENT VARIABLES (IN UNIT SPACE AND NATURAL LOG SPACE)

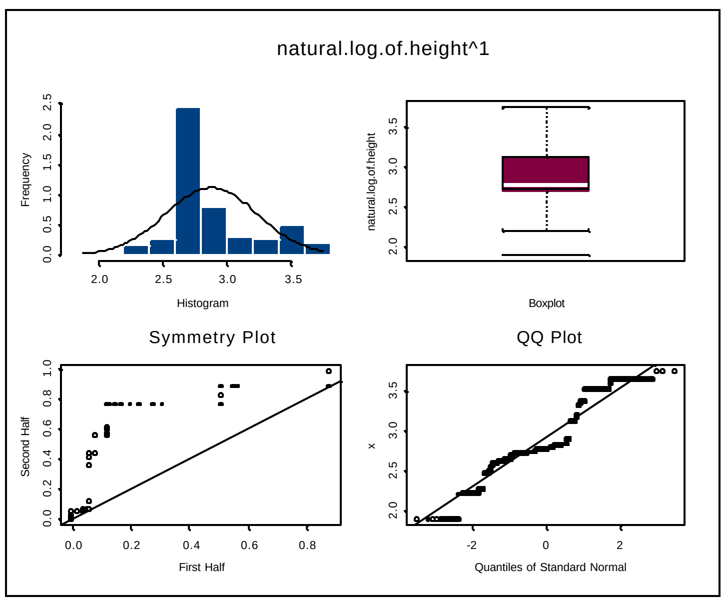


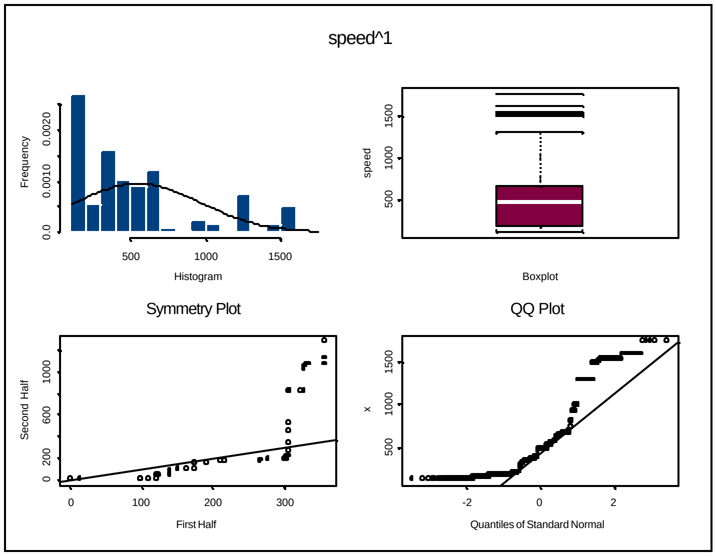


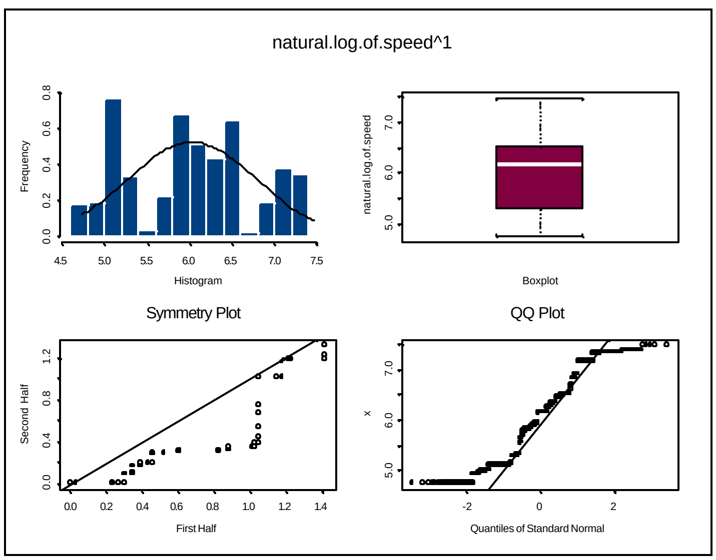

length^1
Frequency
Histogram
length
Boxplot
Symmetry Plot
Second Half
First Half
QQ Plot
x
Quantiles of Standard Normal

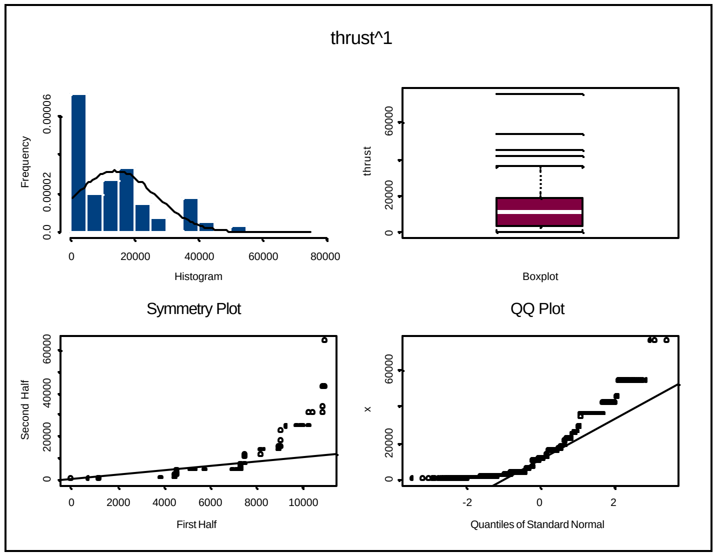

natural.log.of.length^1
Frequency
Histogram
natural.log.of.length
Boxplot
Symmetry Plot
Second Half
First Half
QQ Plot
x
Quantiles of Standard Normal

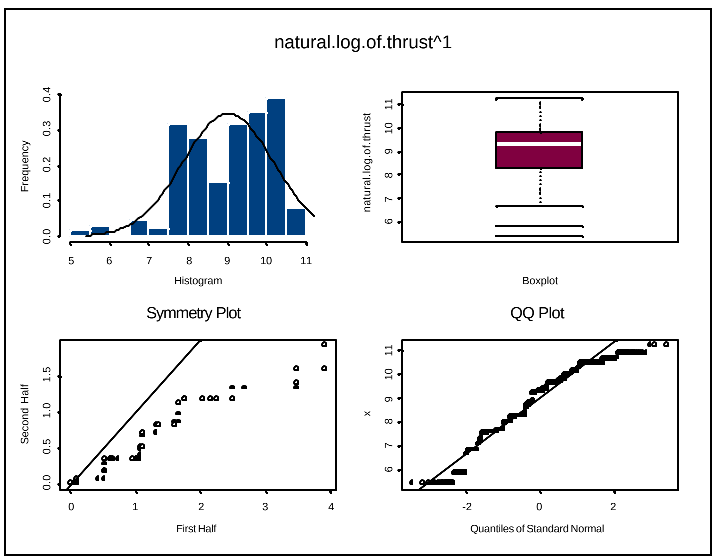

height^1
Frequency
0.0
0.05
0.10
0.15
10
20
30
40
Histogram
height
10
20
30
40
Boxplot
Symmetry Plot
Second Half
0
5
10
15
20
25
0
2
4
6
8
First Half
QQ Plot
x
10
20
30
40
-2
0
2
Quantiles of Standard Normal


natural.log.of.height^1
Frequency
0.0
0.5
1.0
1.5
2.0
2.5
2.0
2.5
3.0
3.5
Histogram
natural.log.of.height
2.0
2.5
3.0
3.5
Boxplot
Symmetry Plot
Second Half
0.0
0.2
0.4
0.6
0.8
1.0
0.0
0.2
0.4
0.6
0.8
First Half
QQ Plot
x
2.0
2.5
3.0
3.5
-2
0
2
Quantiles of Standard Normal


speed^1
Frequency
0.0
0.0010
0.0020
500
1000
1500
Histogram
speed
500
1000
1500
Boxplot
Symmetry Plot
Second Half
0
200
600
1000
0
100
200
300
First Half
QQ Plot
x
500
1000
1500
-2
0
2
Quantiles of Standard Normal

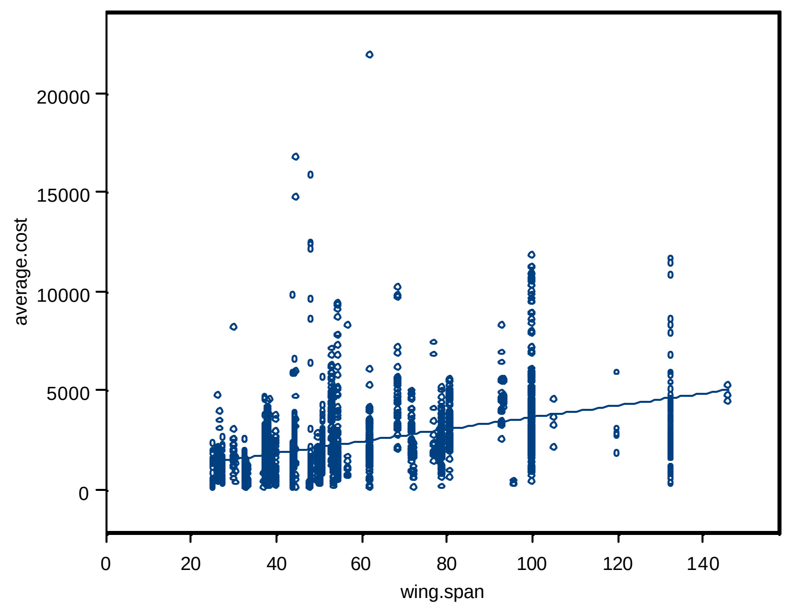

natural.log.of.speed^1
Frequency
0.0
0.2
0.4
0.6
0.8
4.5
5.0
5.5
6.0
6.5
7.0
7.5
Histogram
natural.log.of.speed
5.0
6.0
7.0
Boxplot
Symmetry Plot
Second Half
0.0
0.4
0.8
1.2
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
First Half
QQ Plot
x
5.0
6.0
7.0
-2
0
2
Quantiles of Standard Normal

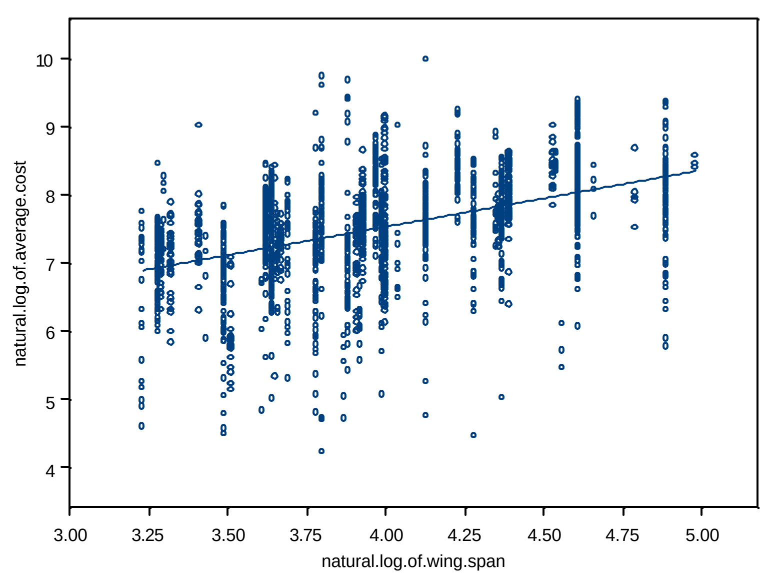

thrust^1
Frequency
0.0
0.00002
0.00006
0
20000
40000
60000
80000
Histogram
thrust
0
20000
60000
Boxplot
Symmetry Plot
Second Half
0
20000
40000
60000
0
2000
4000
6000
8000
10000
First Half
QQ Plot
x
0
20000
60000
-2
0
2
Quantiles of Standard Normal

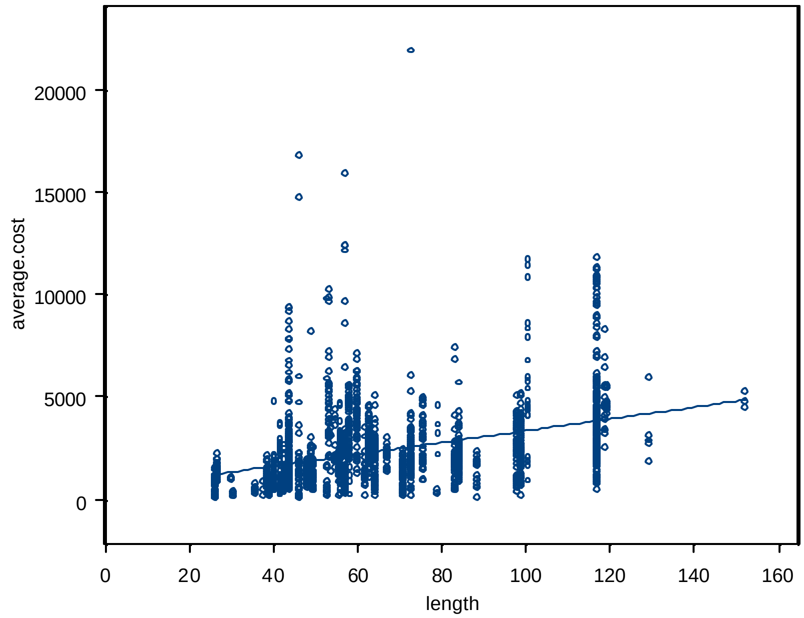

natural.log.of.thrust^1
Frequency
0.0
0.1
0.2
0.3
0.4
5
6
7
8
9
10
11
Histogram
natural.log.of.thrust
6
7
8
9
10
11
Boxplot
Symmetry Plot
Second Half
0.0
0.5
1.0
1.5
0
1
2
3
4
First Half
QQ Plot
x
6
7
8
9
10
11
-2
0
2
Quantiles of Standard Normal

THIS PAGE INTENTIONALLY LEFT BLANK

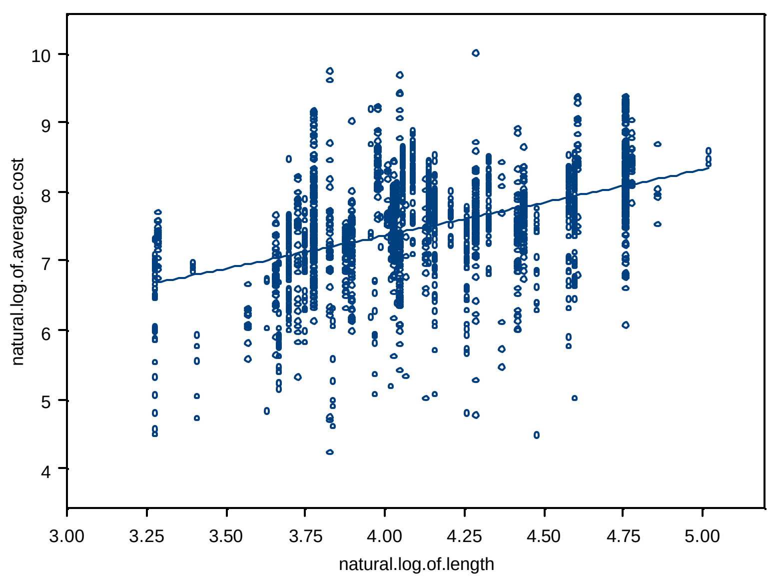
APPENDIX D. DEPENDENT VARIABLE VS. INDEPENDENT VARIABLES SCATTER PLOTS



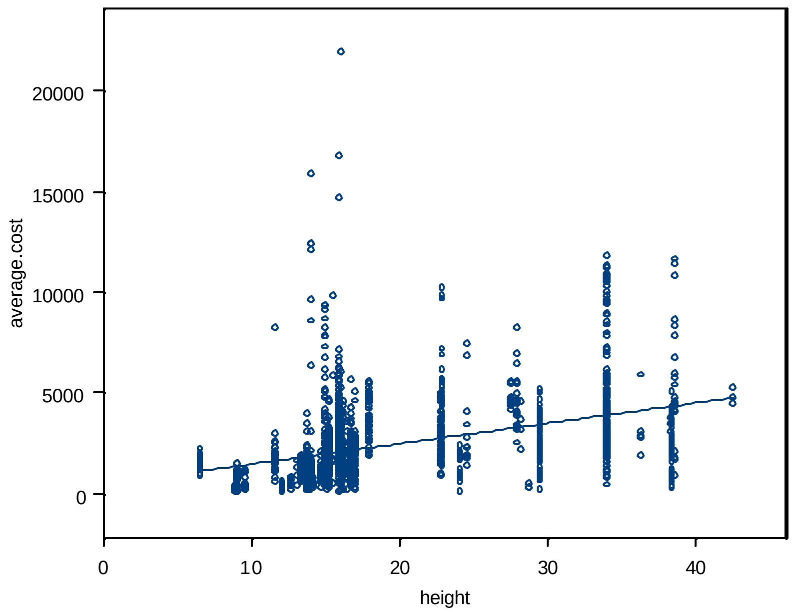


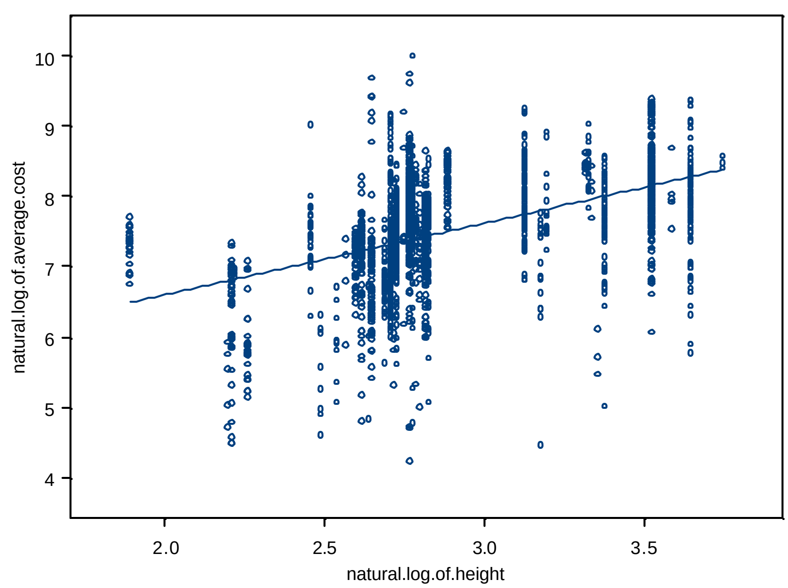


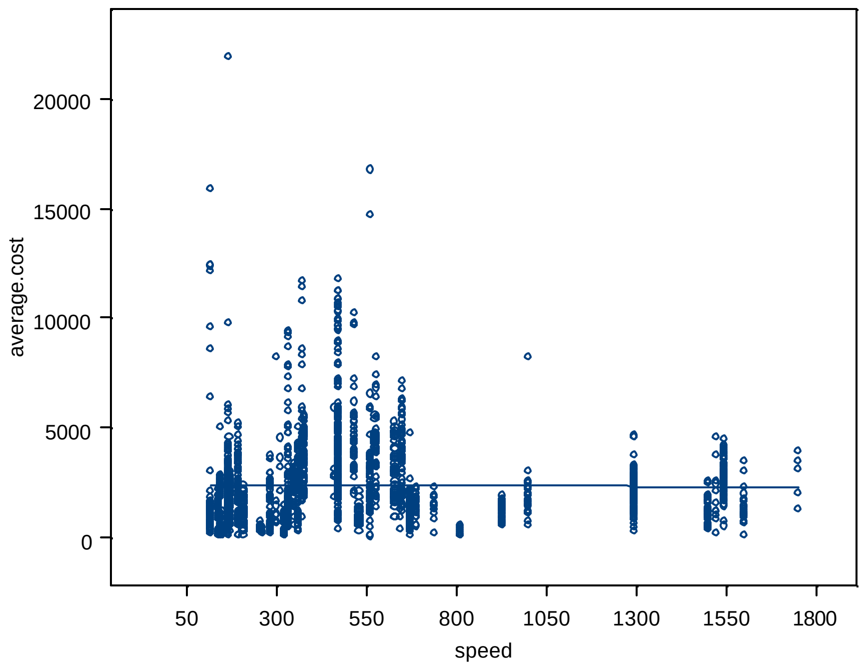
20000
15000
10000
5000
0
average.cost
0
20
40
60
80
100
120
140
160
length



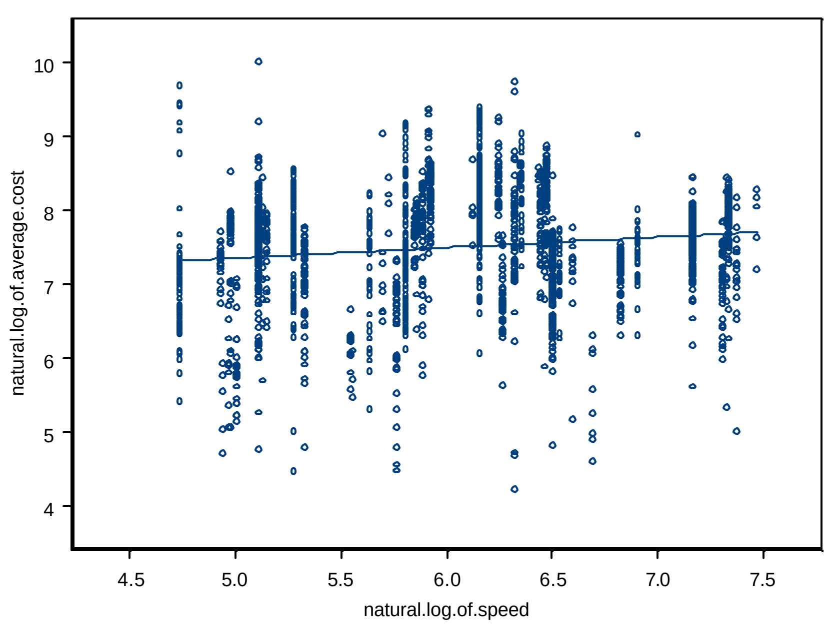
10
9
8
7
6
5
4
natural.log.of.average.cost
3.00
3.25
3.50
3.75
4.00
4.25
4.50
4.75
5.00
natural.log.of.length


20000
15000
10000
5000
0
average.cost
0
10
20
30
40
height

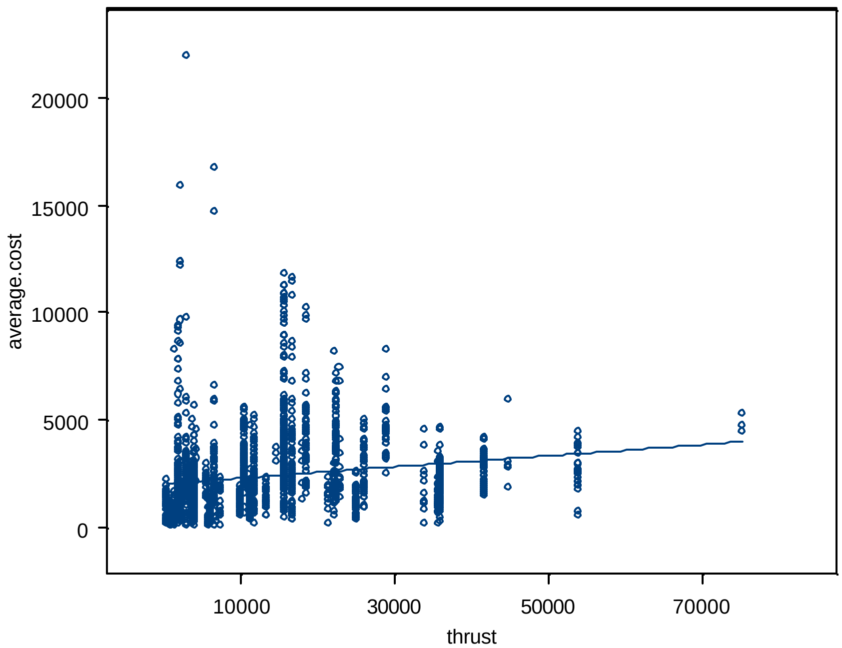

10
9
8
7
6
5
4
natural.log.of.average.cost
2.0
2.5
3.0
3.5
natural.log.of.height



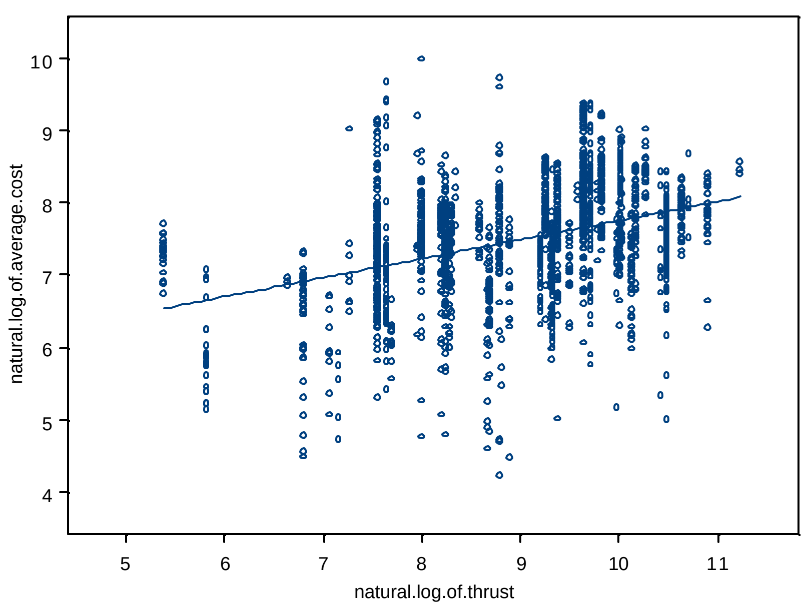
average.cost
20000
15000
10000
5000
0
50
300
550
800
1050
1300
1550
1800
speed



natural.log.of.average.cost
10
9
8
7
6
5
4
4.5
5.0
5.5
6.0
6.5
7.0
7.5
natural.log.of.speed



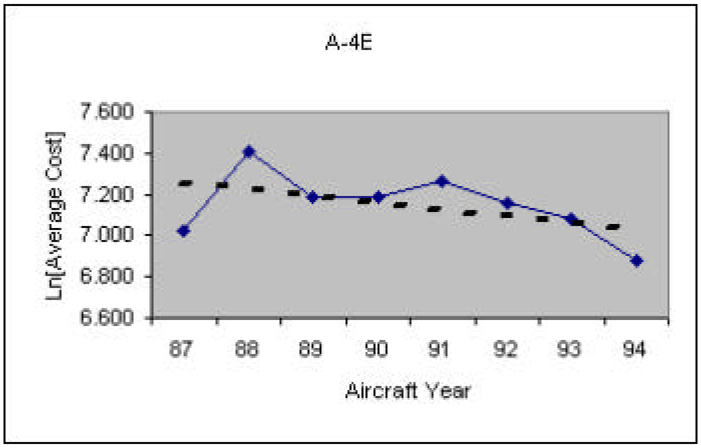
average.cost
20000
15000
10000
5000
0
10000
30000
50000
70000
thrust

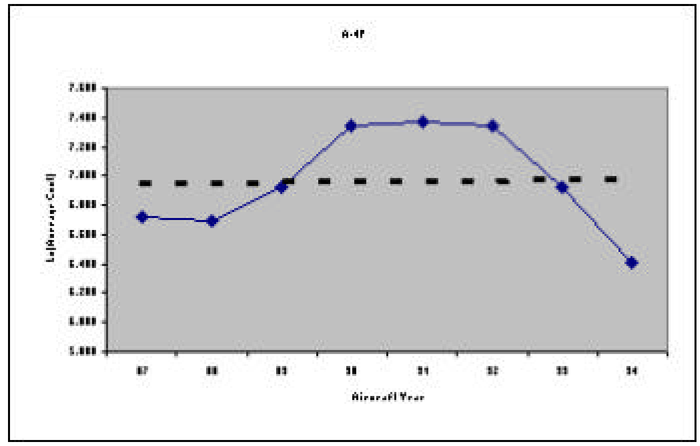


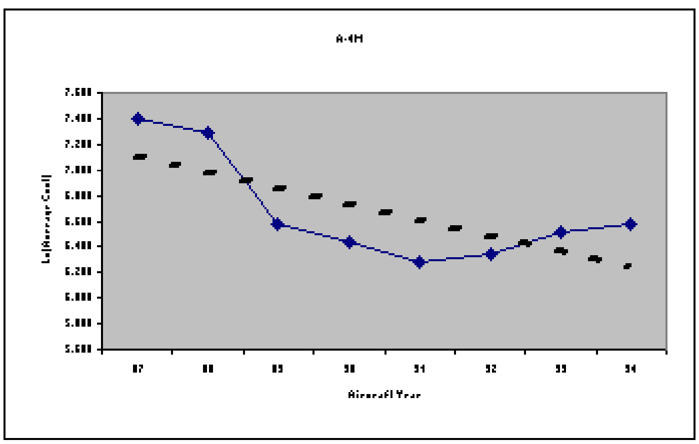
natural.log.of.average.cost
10
9
8
7
6
5
4
5
6
7
8
9
10
11
natural.log.of.thrust

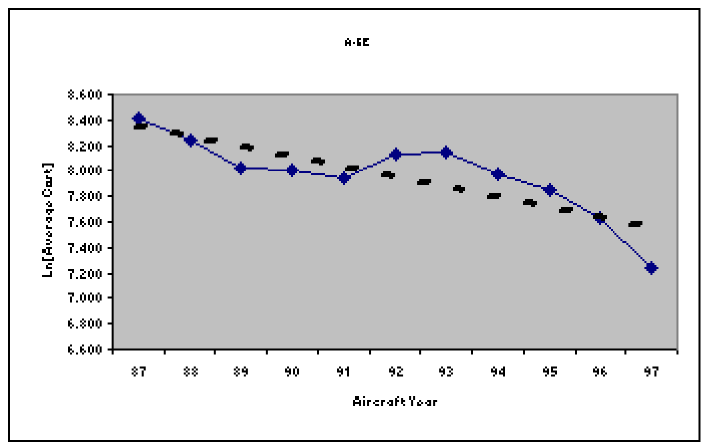
THIS PAGE INTENTIONALLY LEFT BLANK

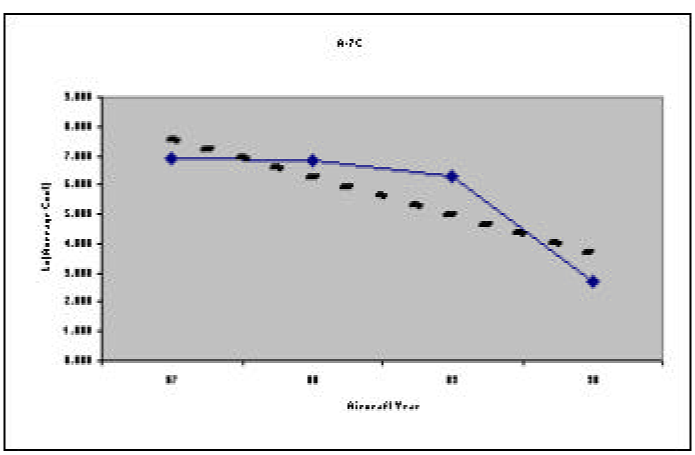
APPENDIX E. US NAVY AIRCRAFT LN[WEIGHTED AVERAGE COST] VS. AIRCRAFT YEAR LINE CHARTS

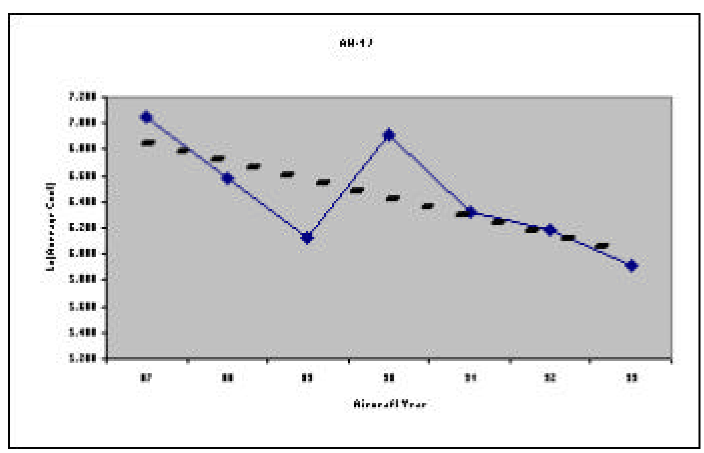


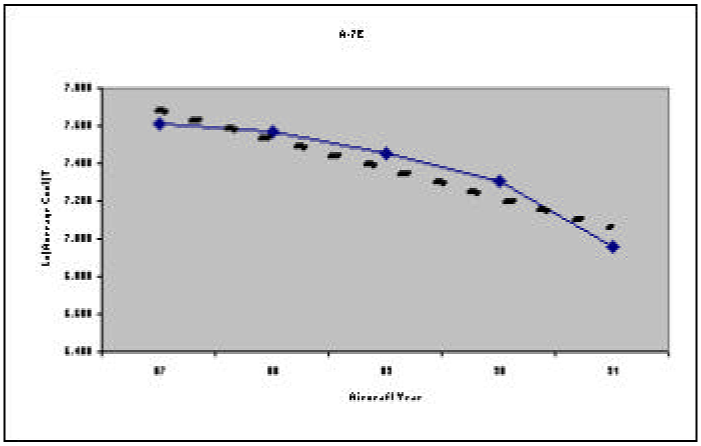


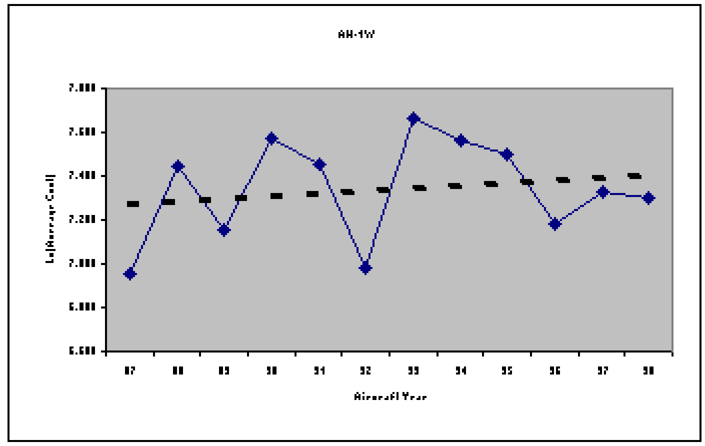


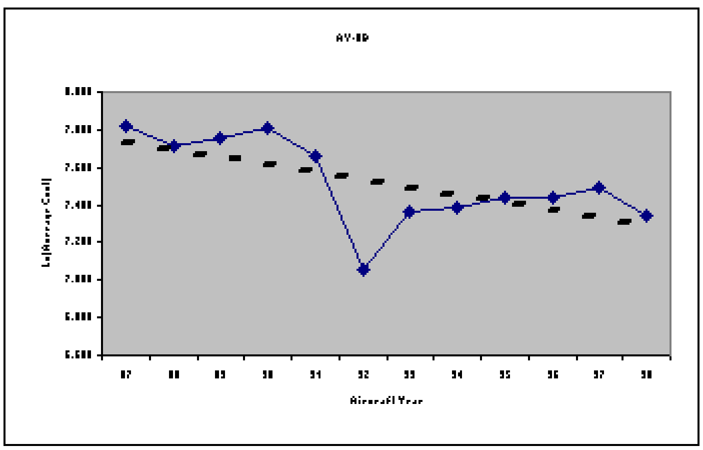


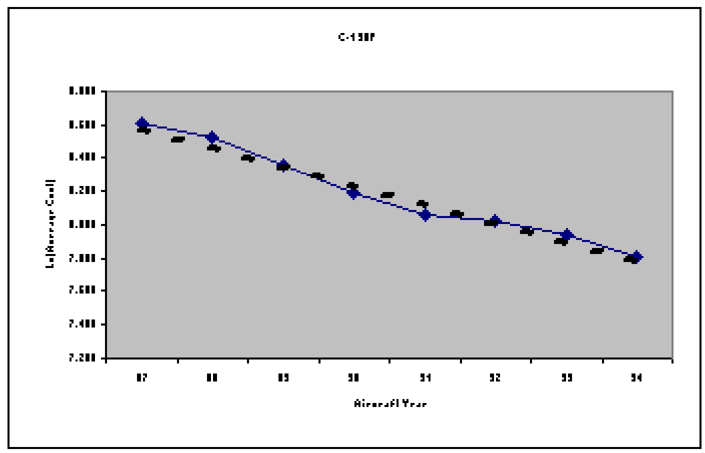


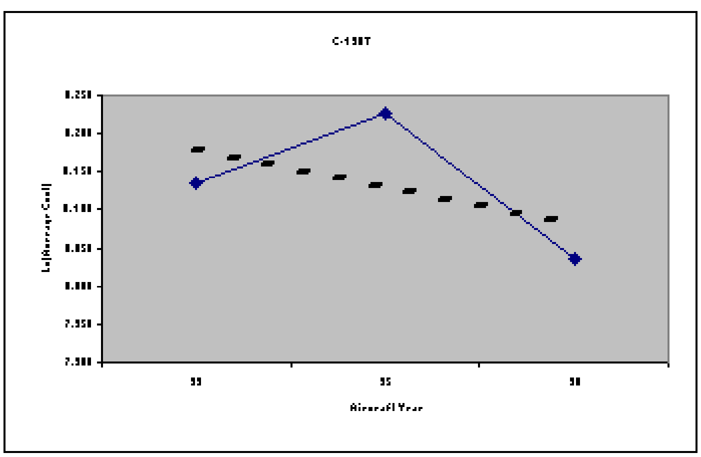


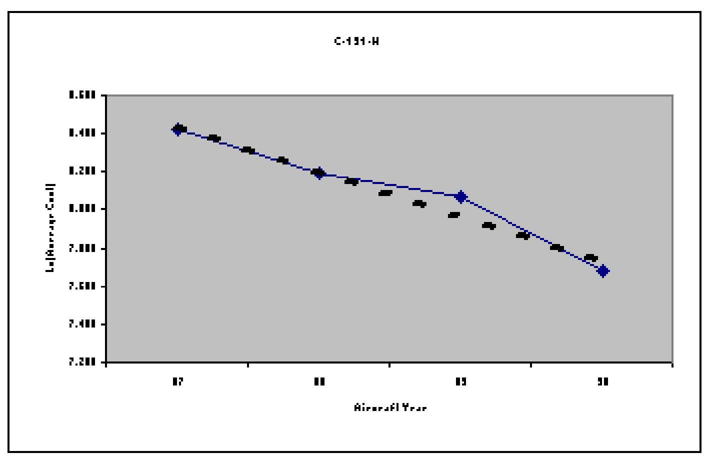


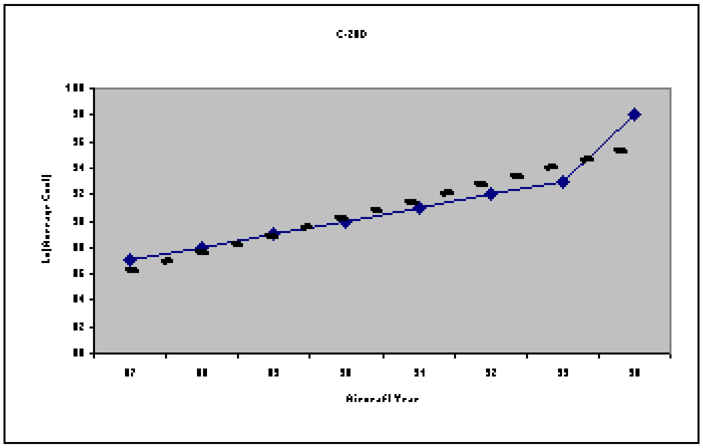


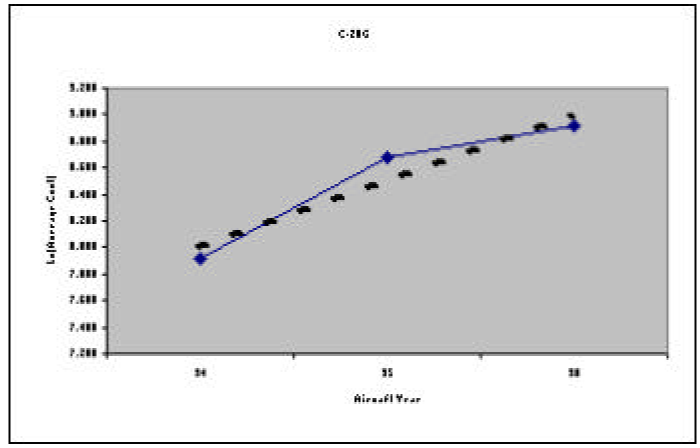


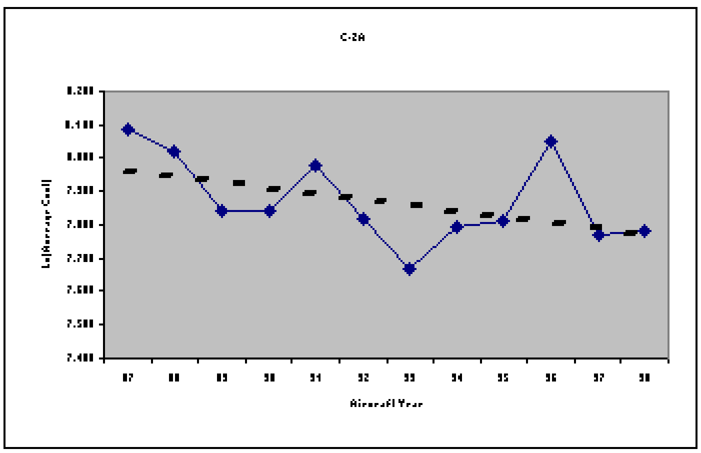


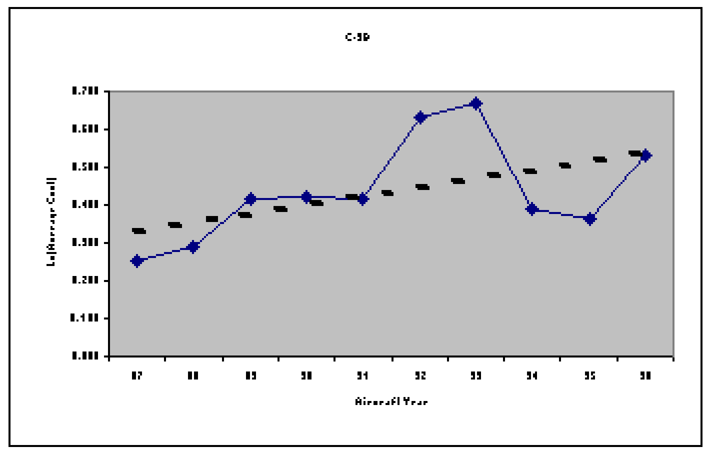


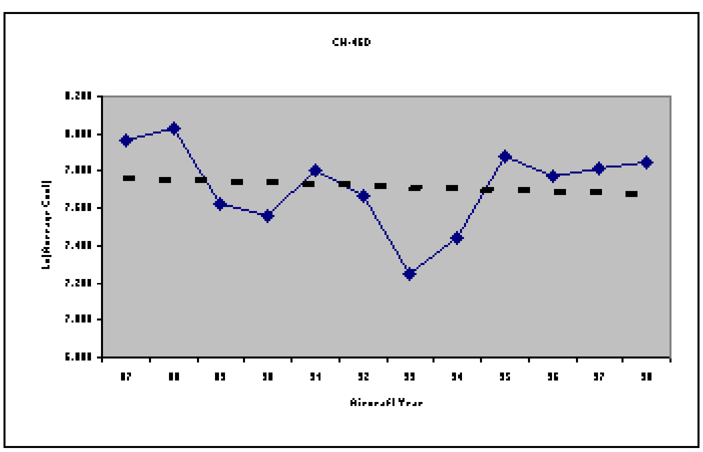


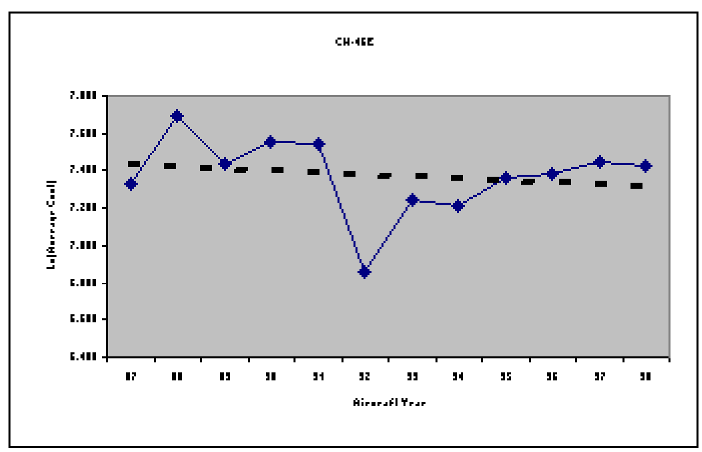

C-20D
Aircraft Year

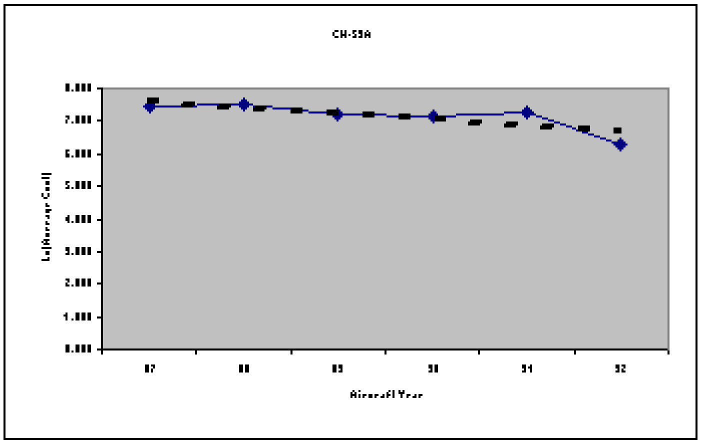

C-20G
Aircraft Year

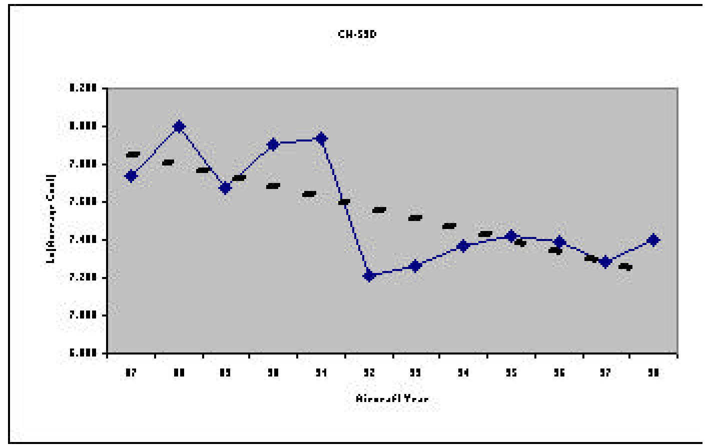

C-2A
Aircraft Year

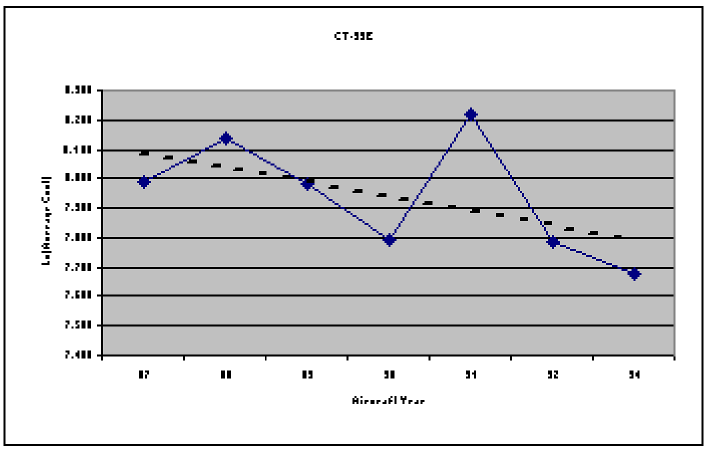

C-9B
Aircraft Year

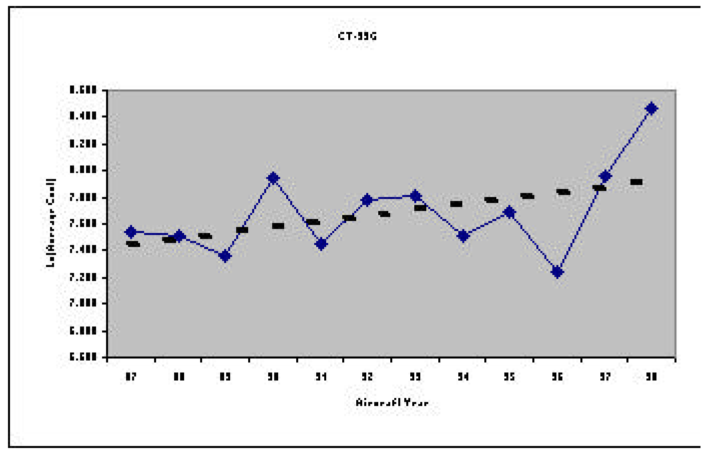

CH-46D
Aircraft Year

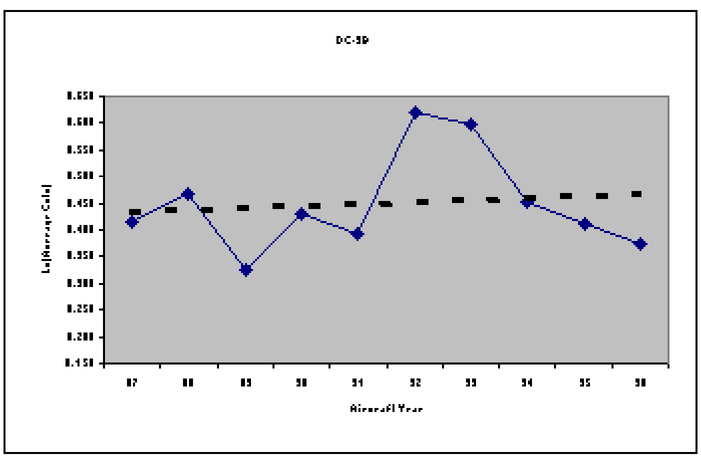

CH-46E
Aircraft Year

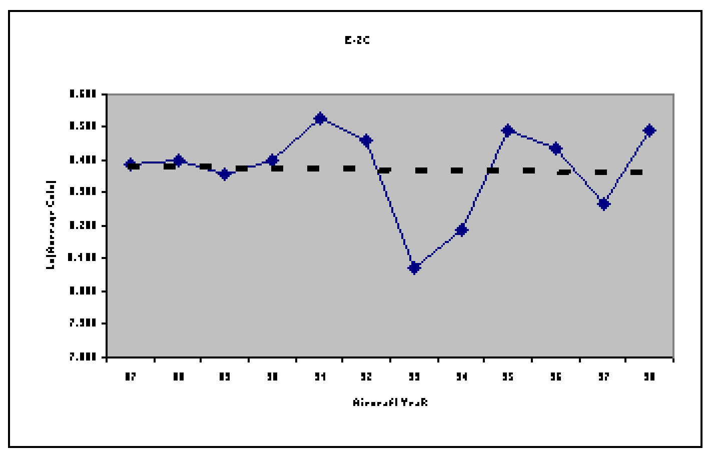

CH-53A

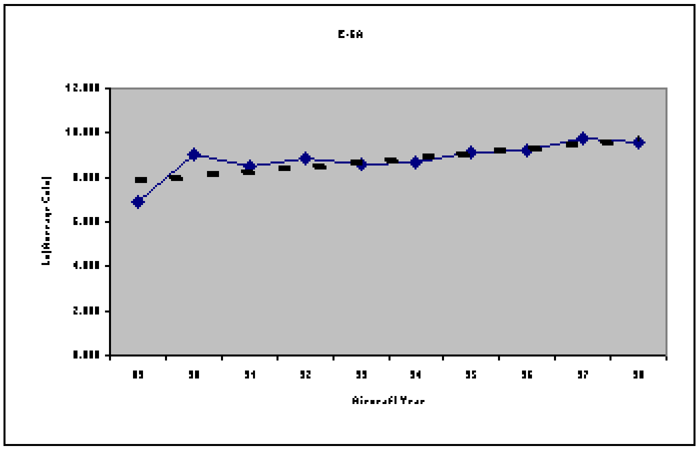

CH-53D

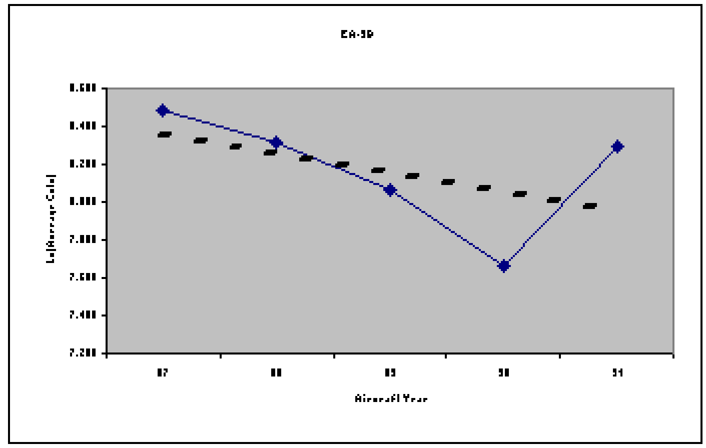


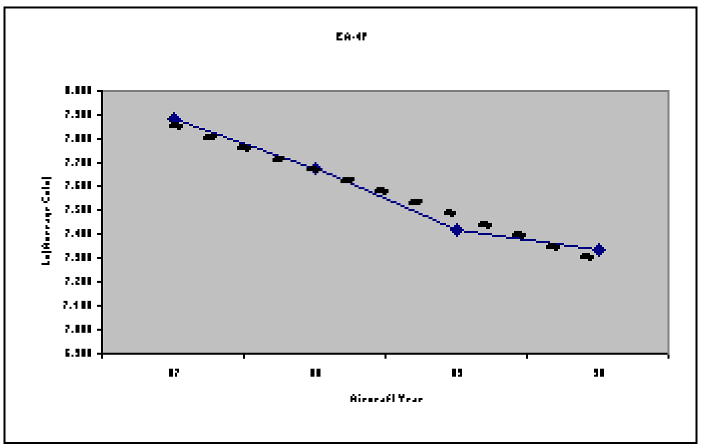


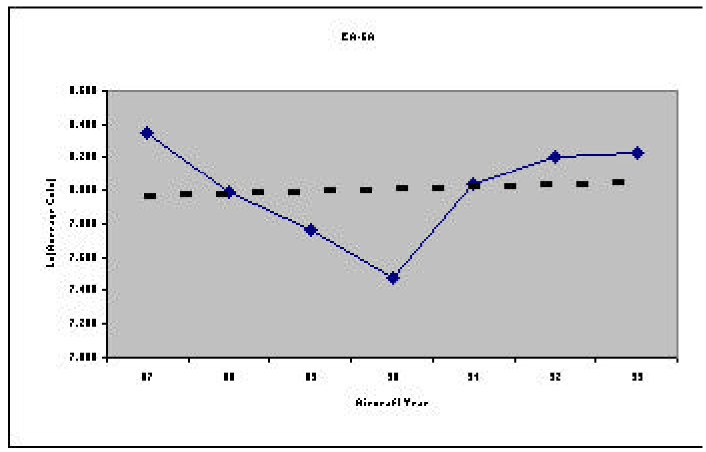


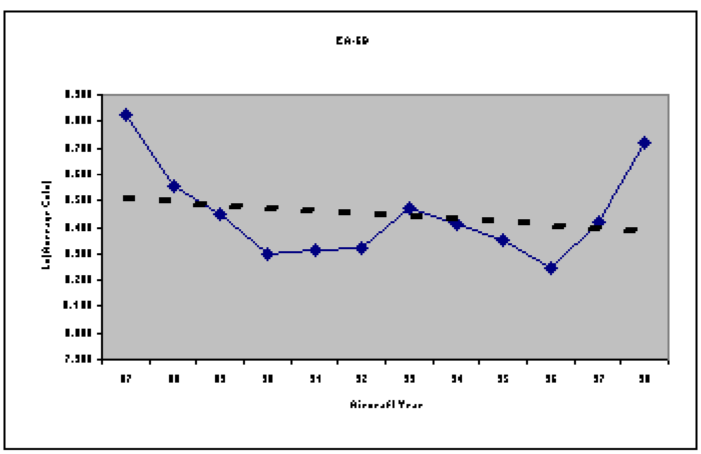

E-2C

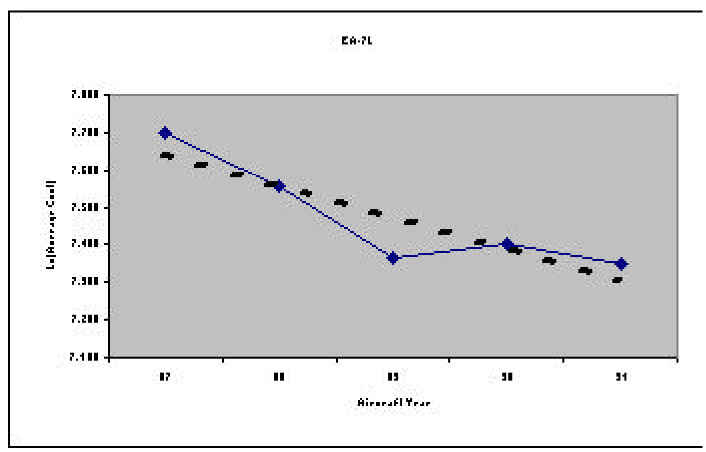


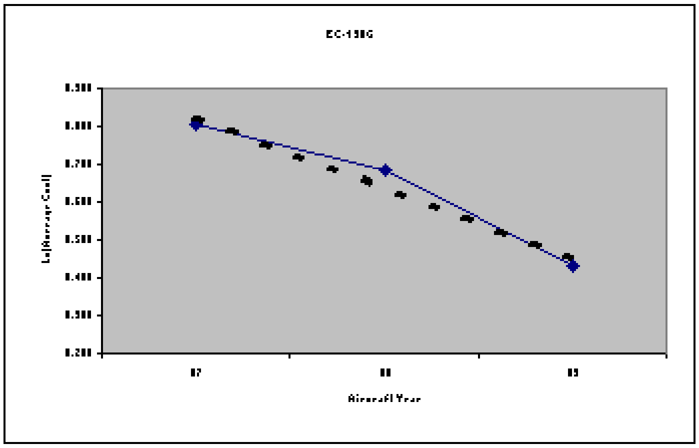


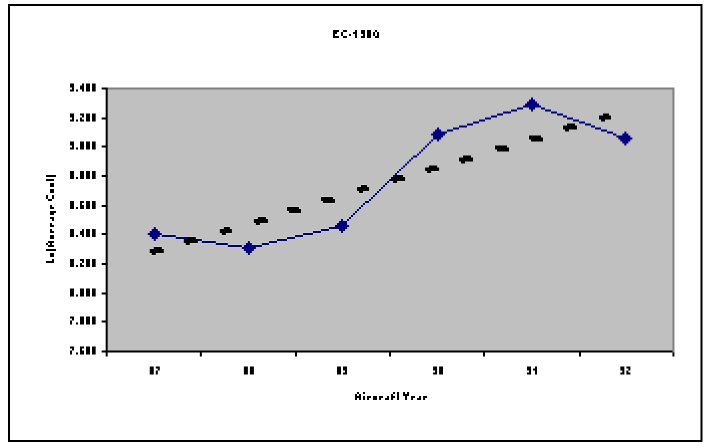


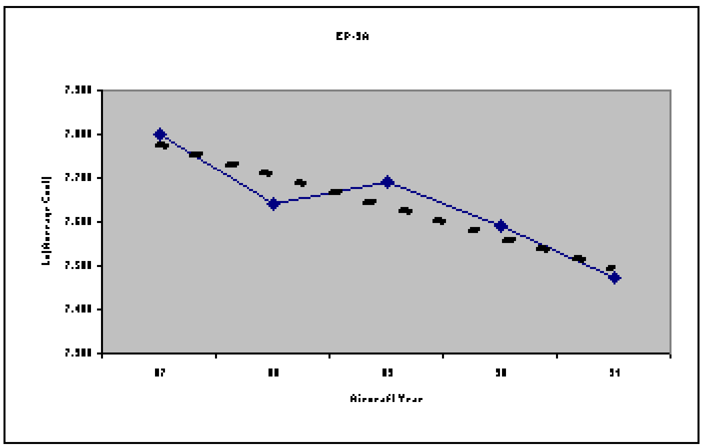


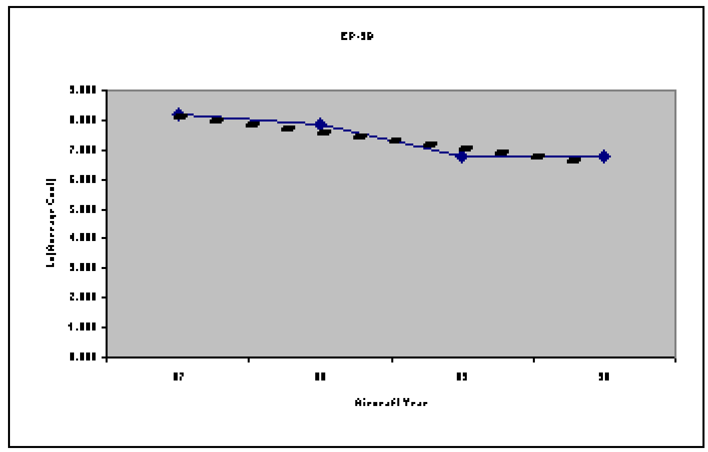


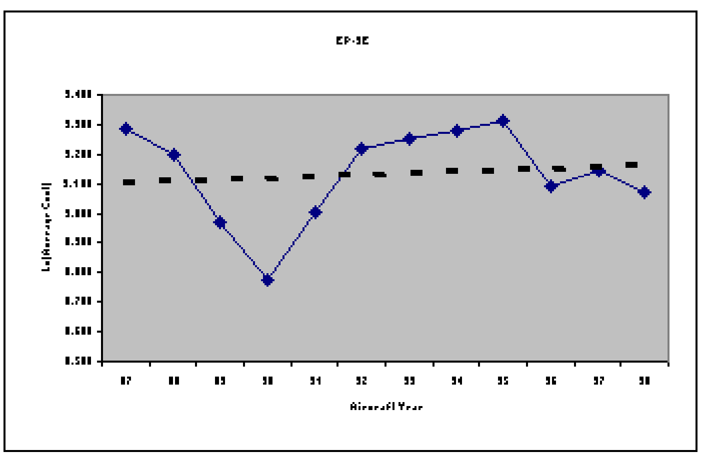


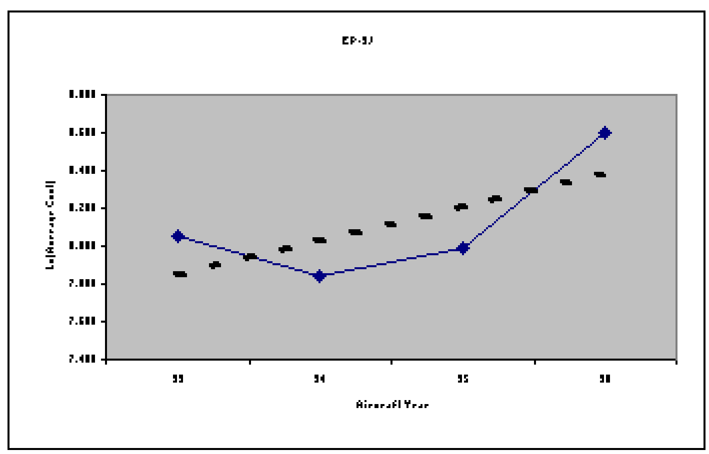


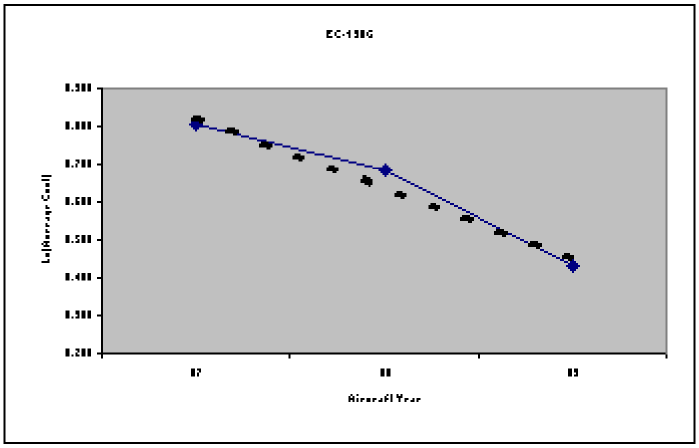


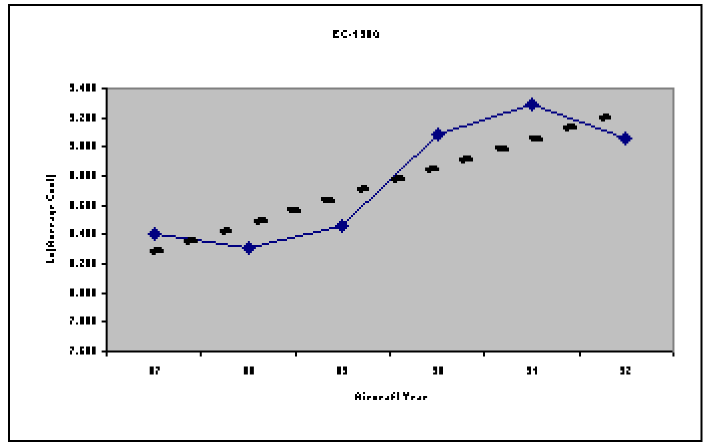


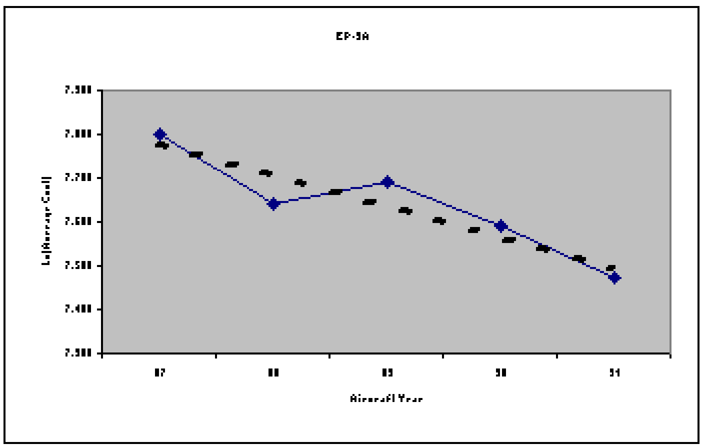


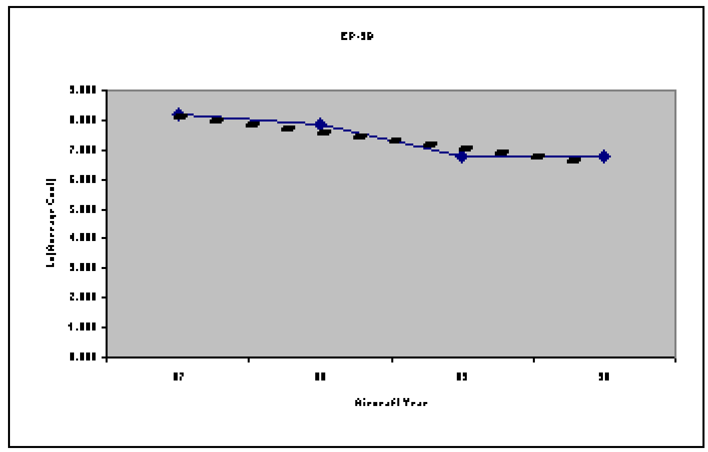


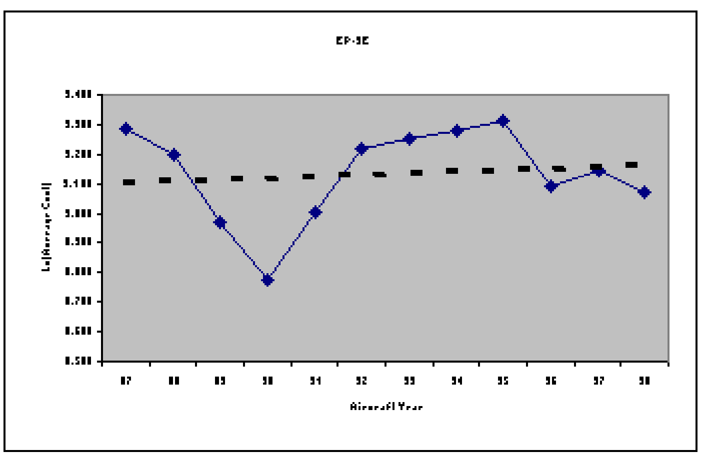


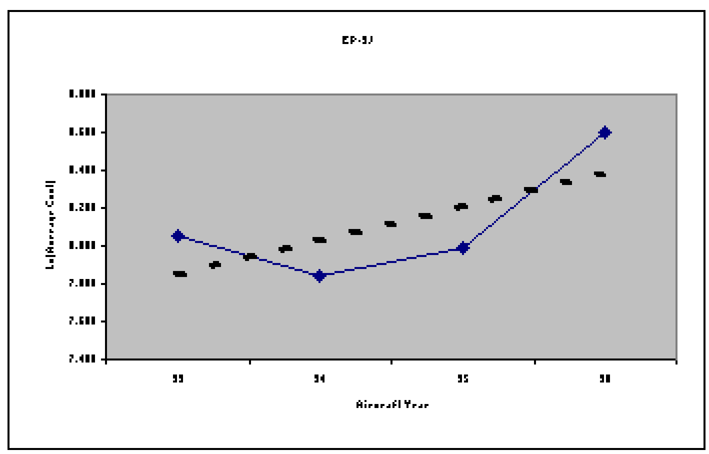


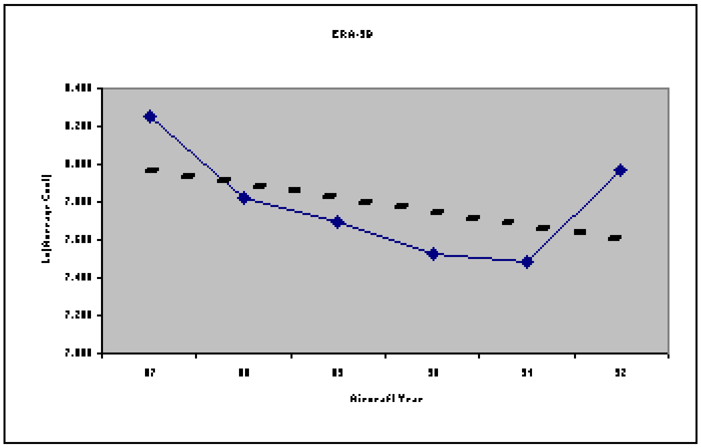


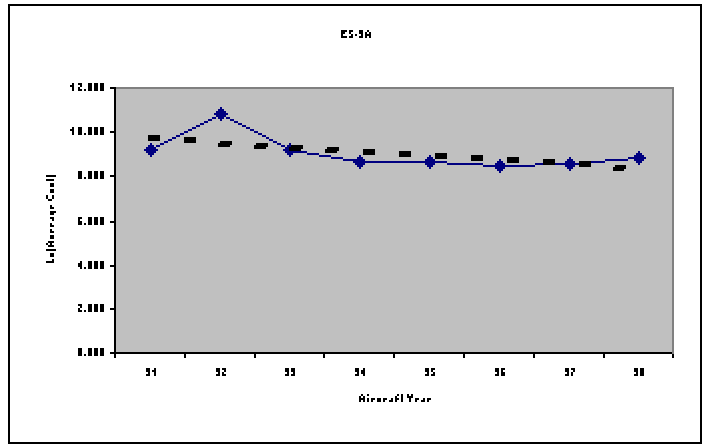


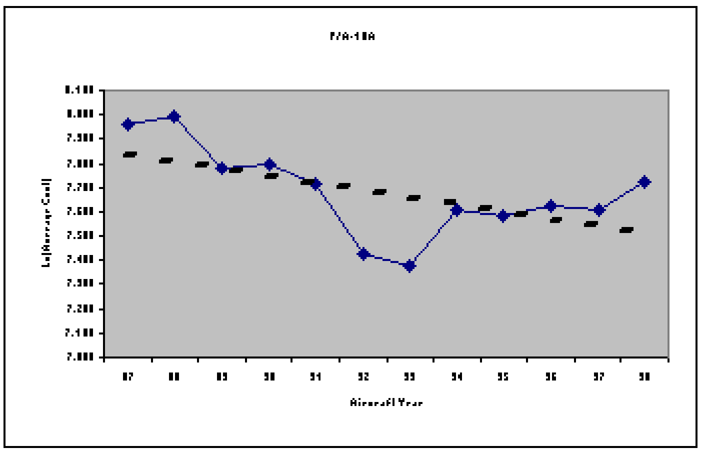


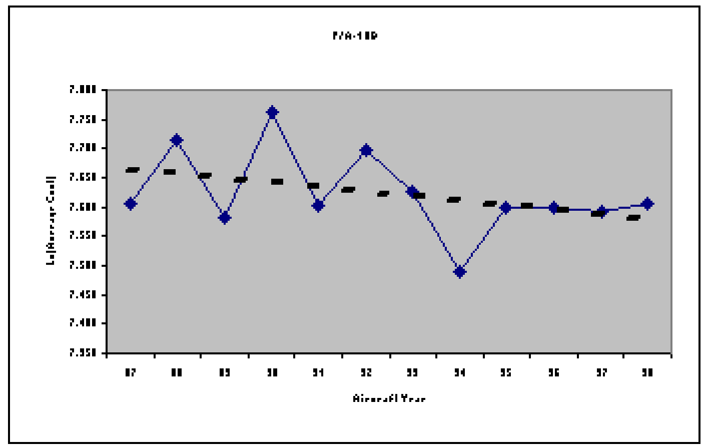


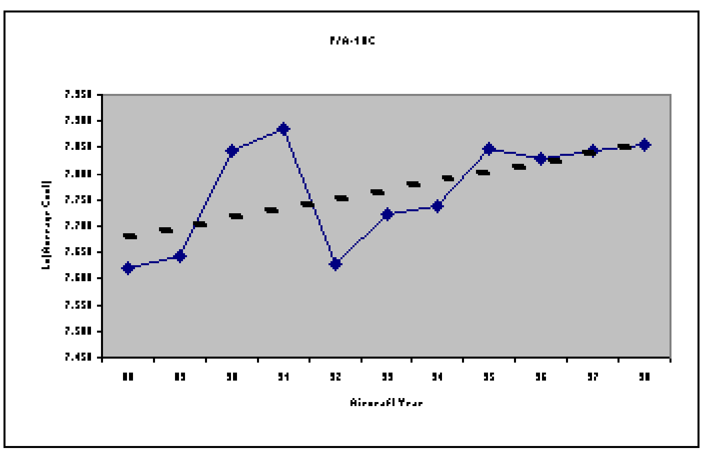


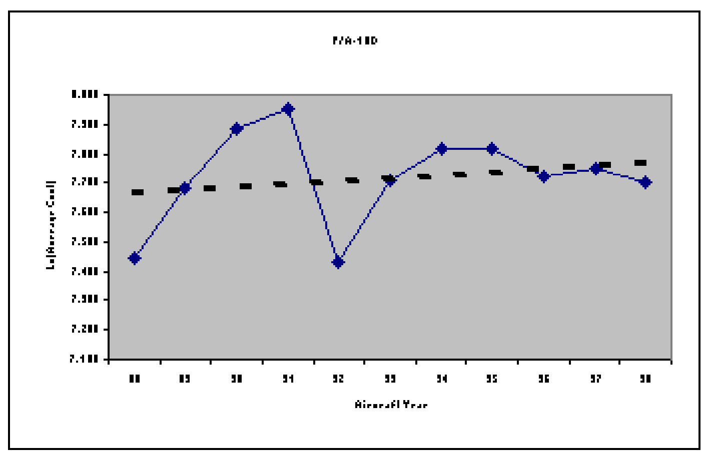


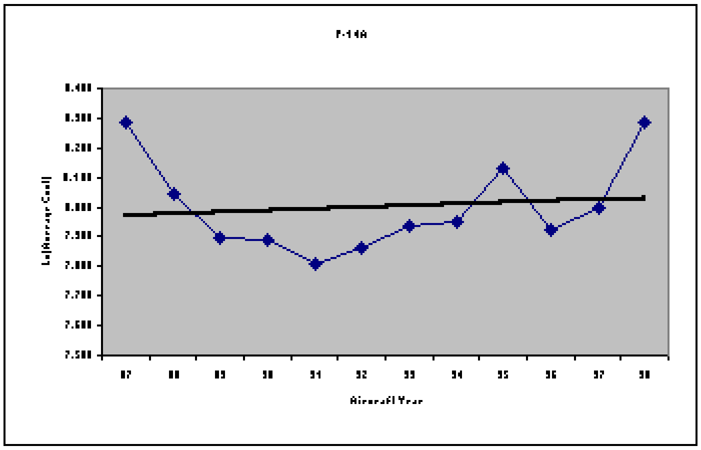


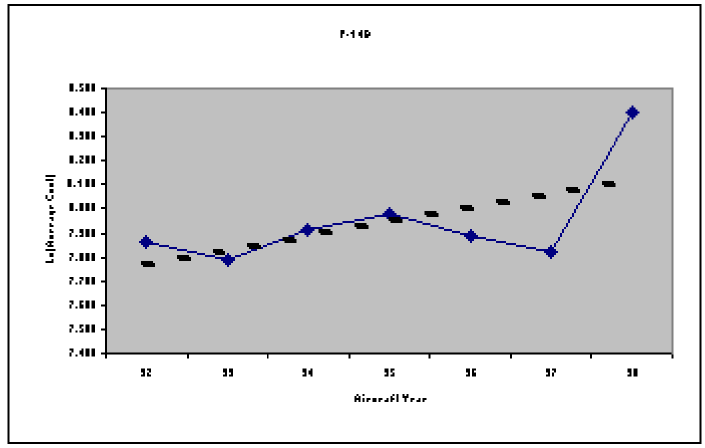


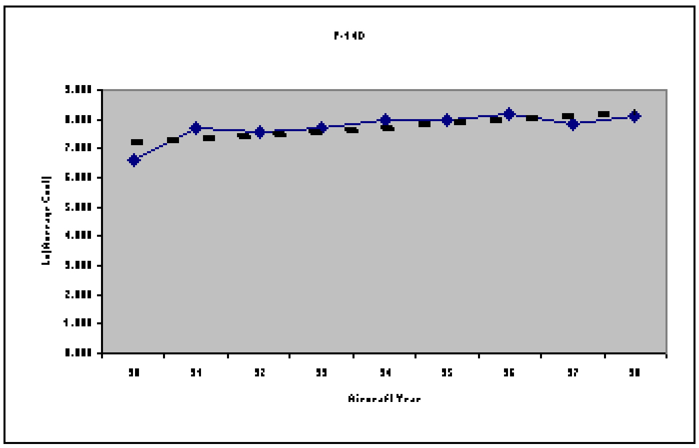


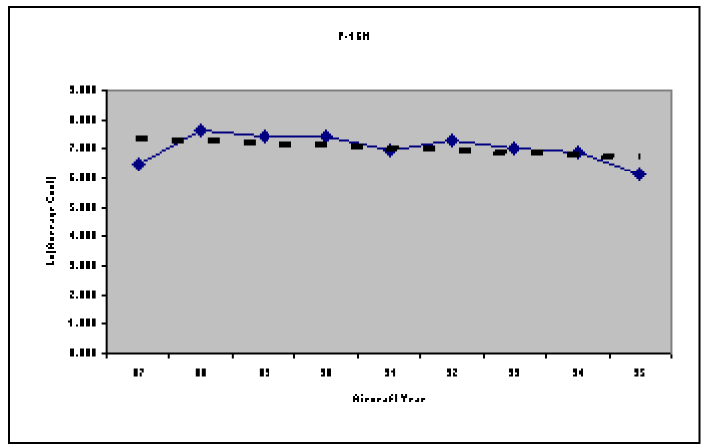


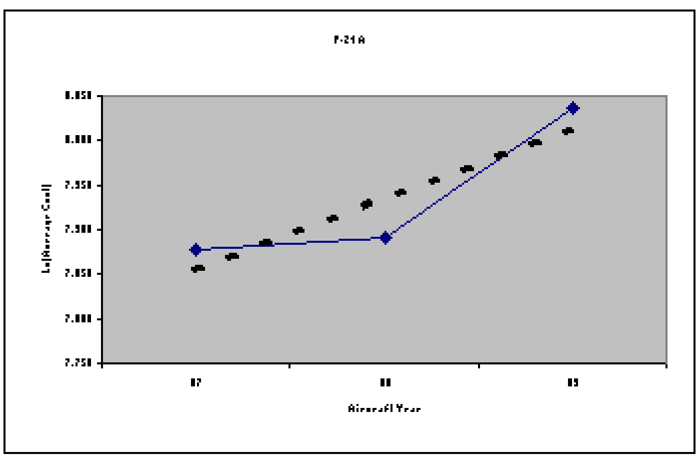


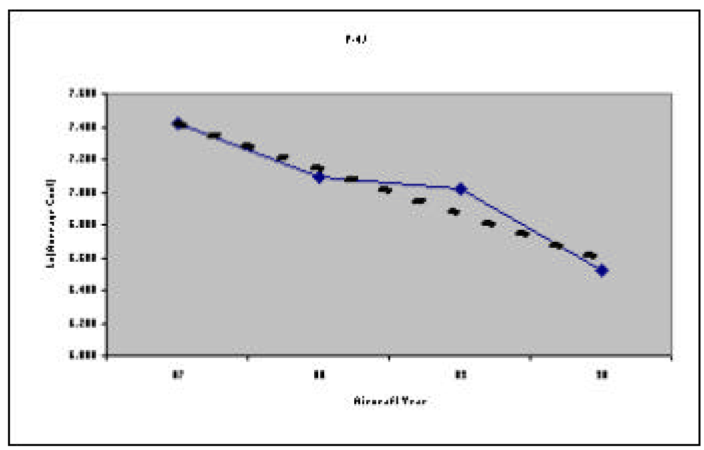


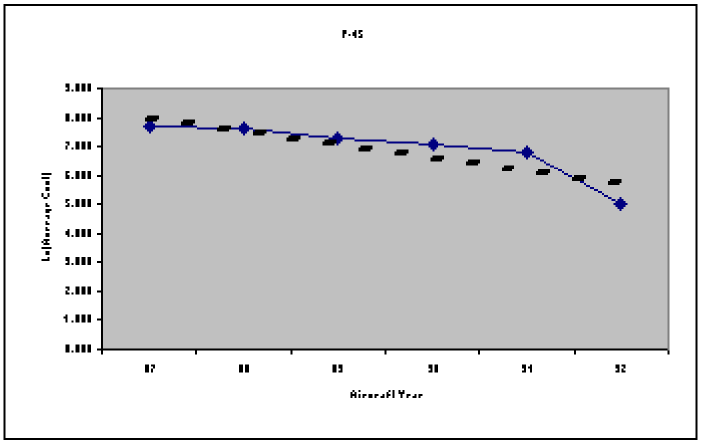


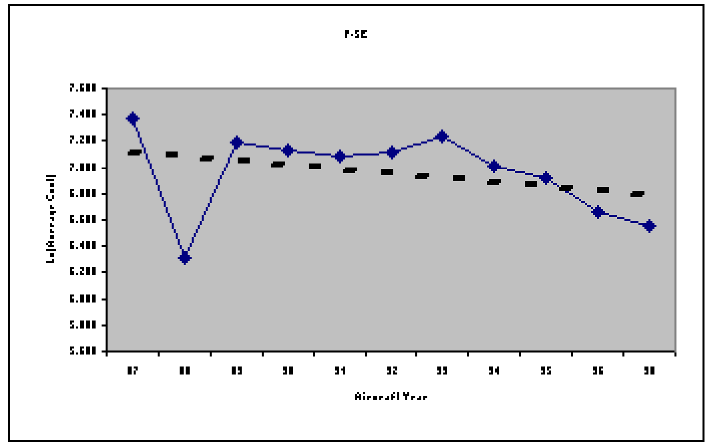


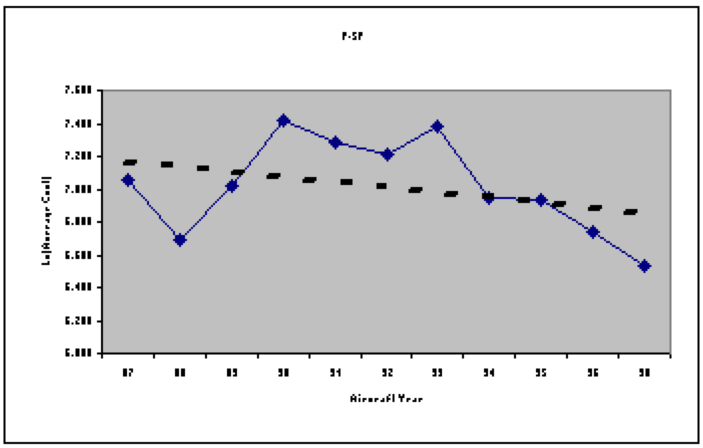


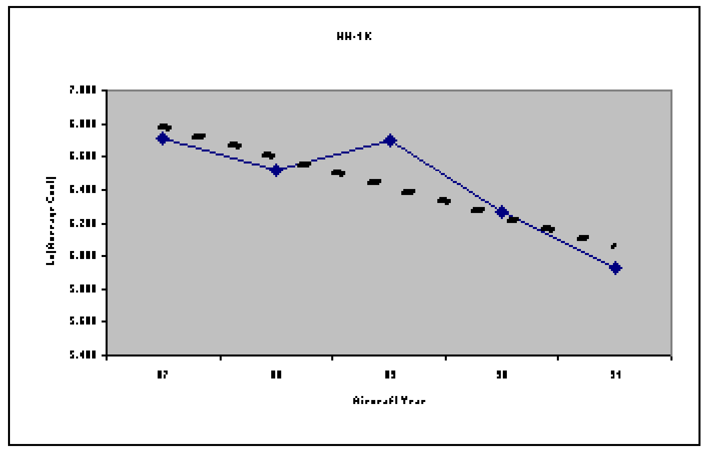


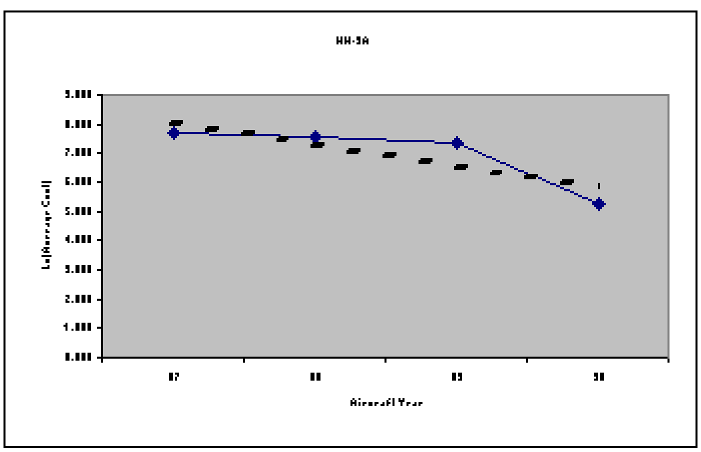


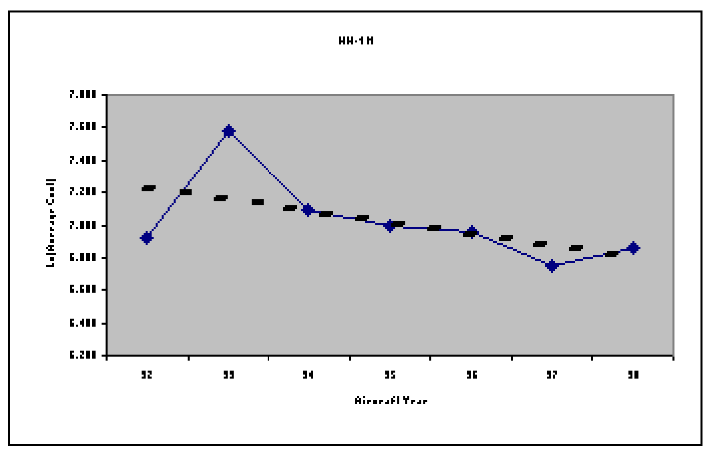


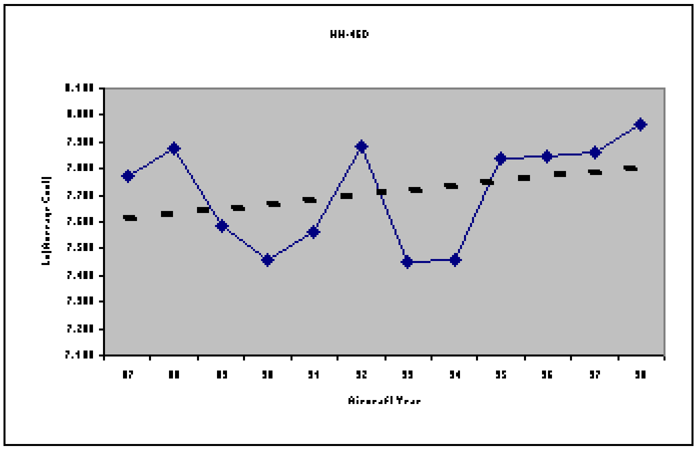


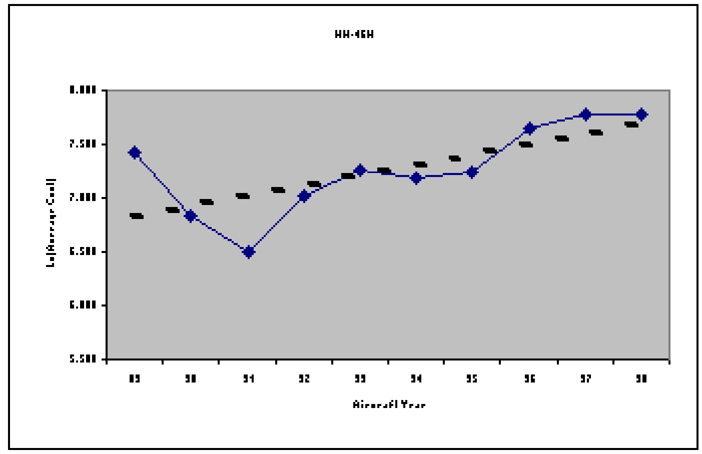


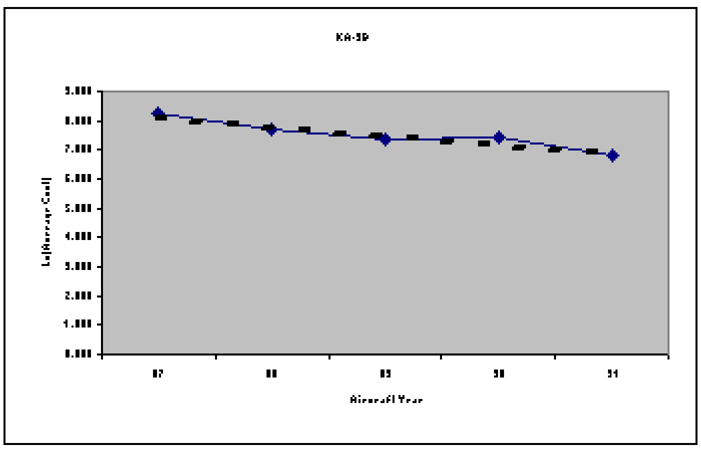


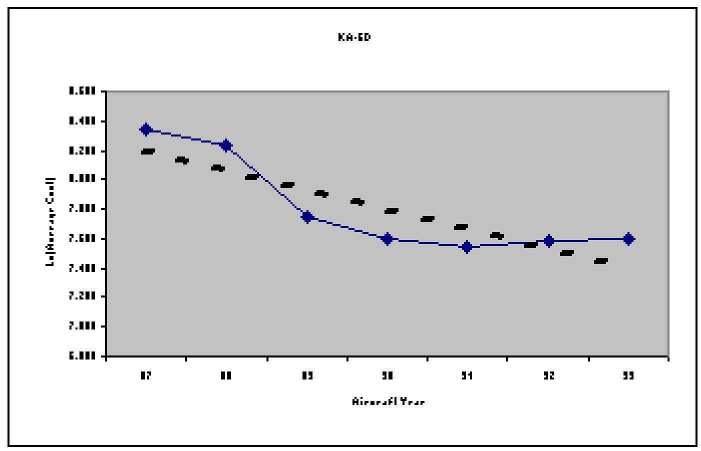


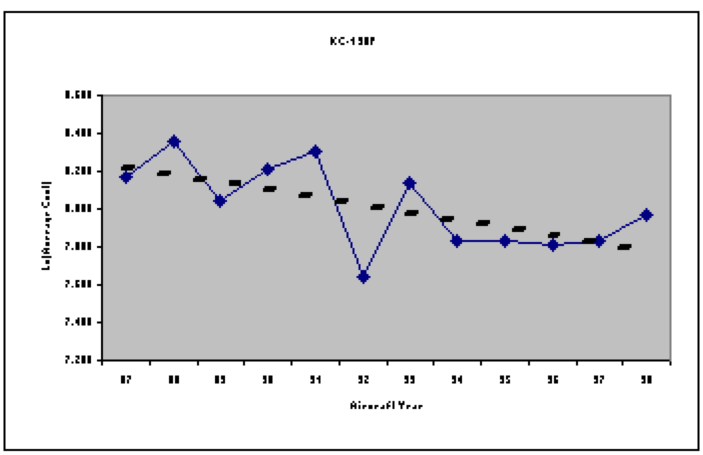


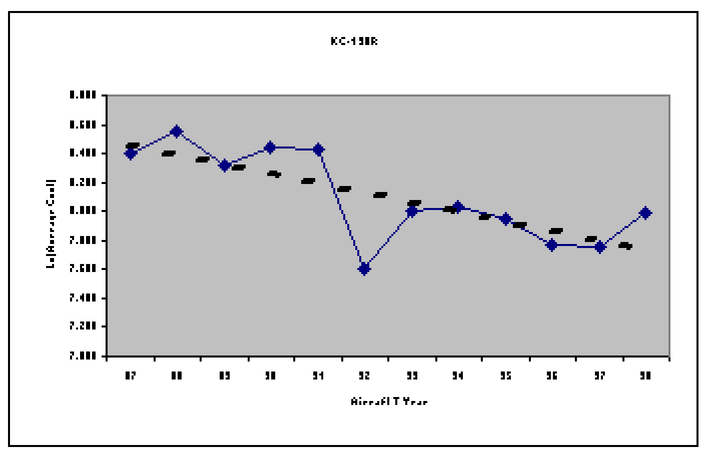

HH-46D
Ln(Average Cost)
Aircraft Year

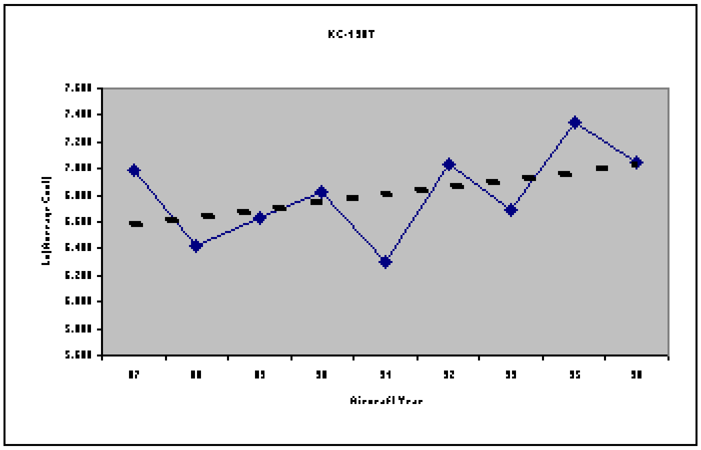

HH-46H
Ln(Average Cost)
Aircraft Year

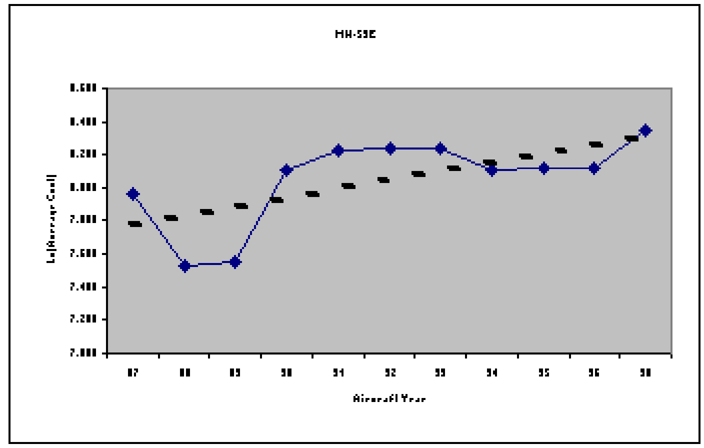

KA-3B
Ln(Average Cost)
Aircraft Year

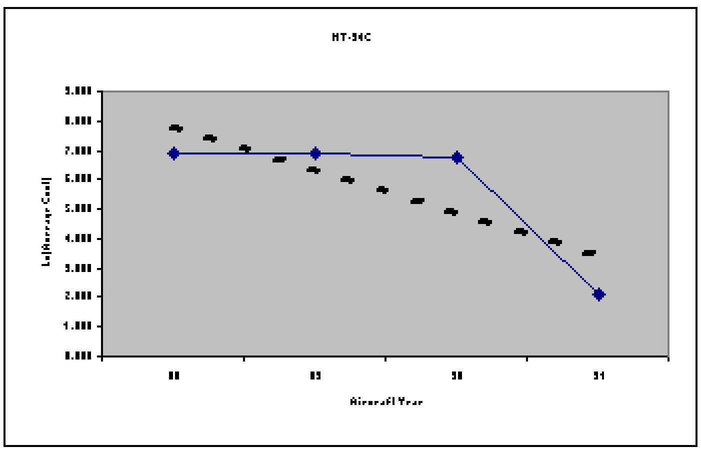

KA-6D
Ln(Average Cost)
Aircraft Year

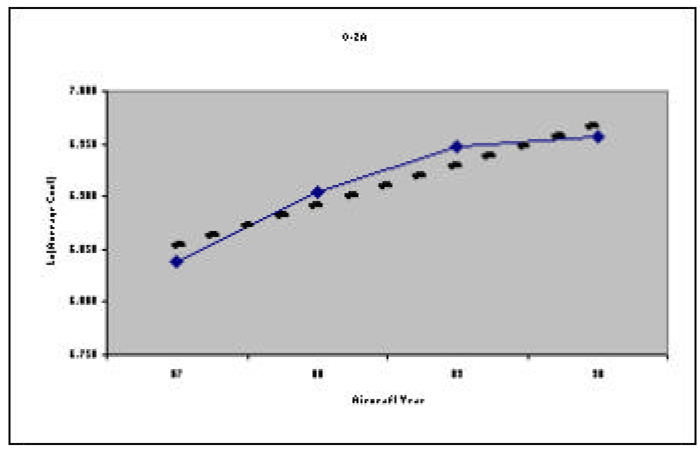

KC-130F
Ln(Average Cost)
Aircraft Year

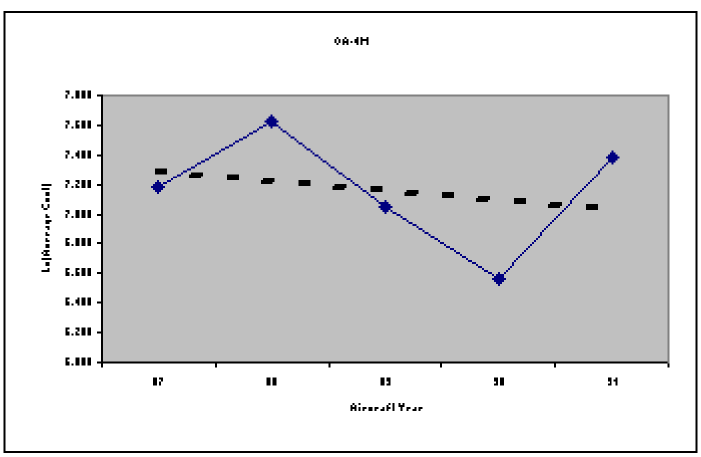

KC-130R
Ln(Average Cost)
Aircraft Year

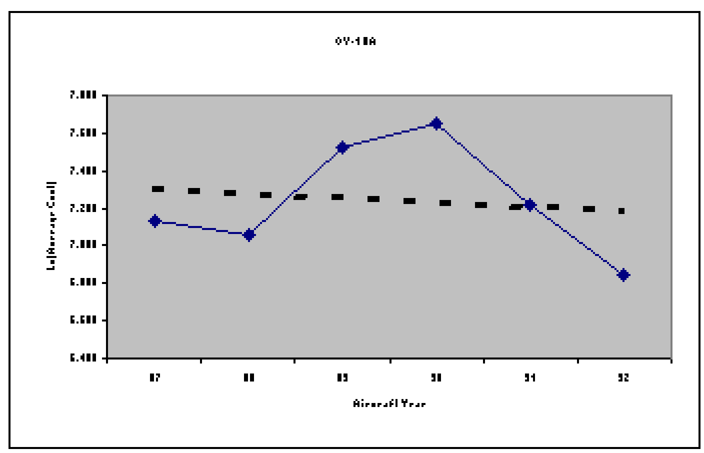

KC-135T

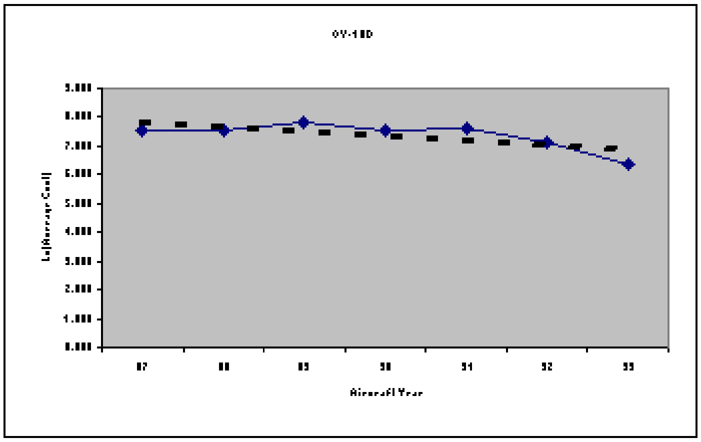

MH-53E

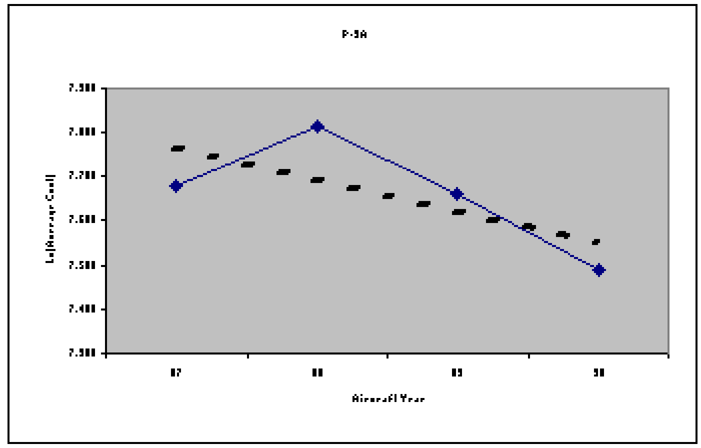

HT-34C

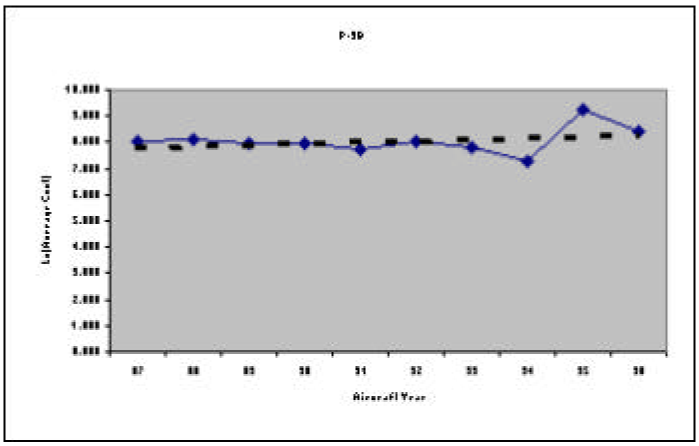

O-2A

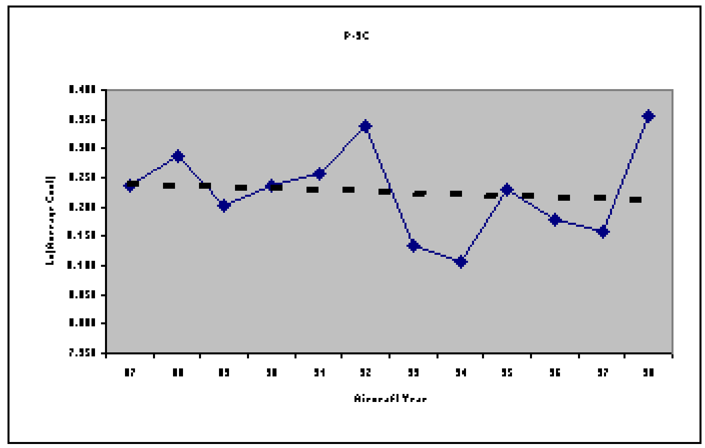

OA-4M

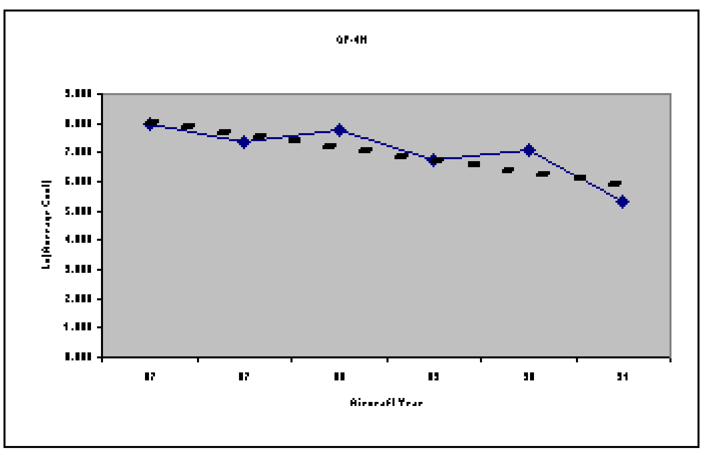

OV-10A

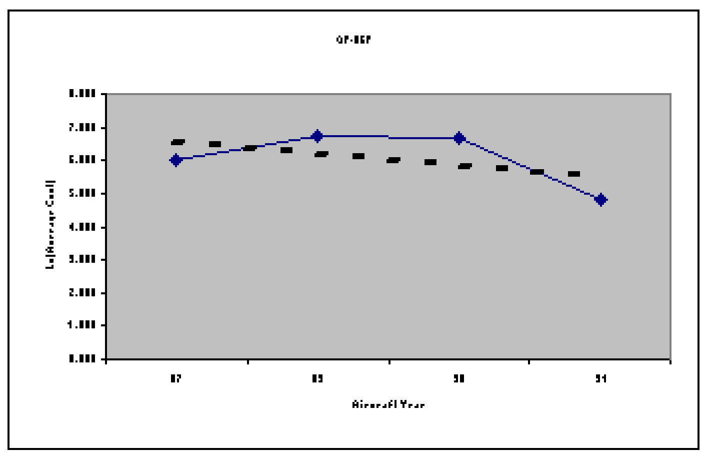


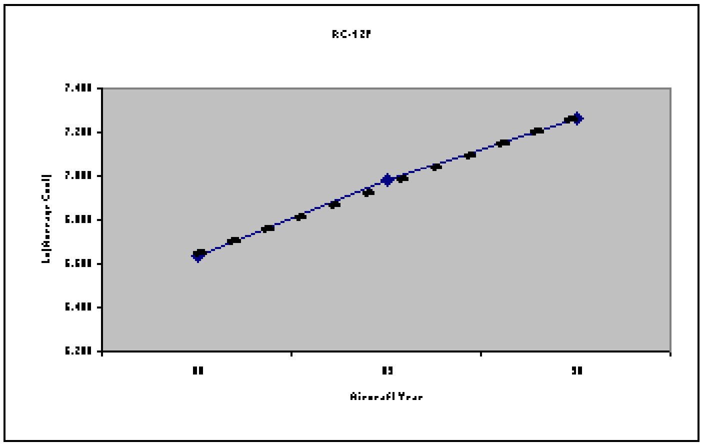


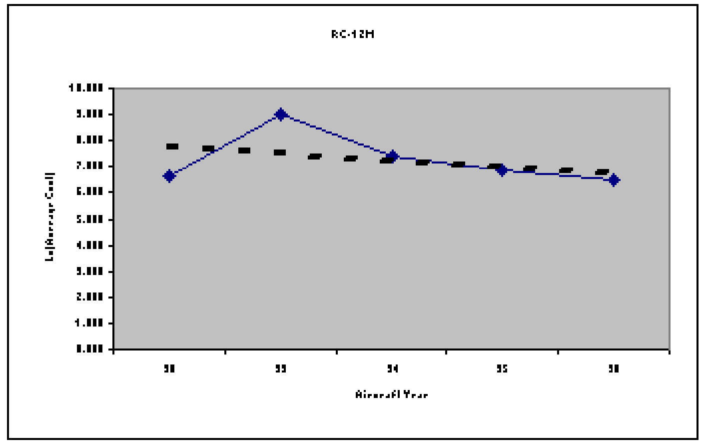


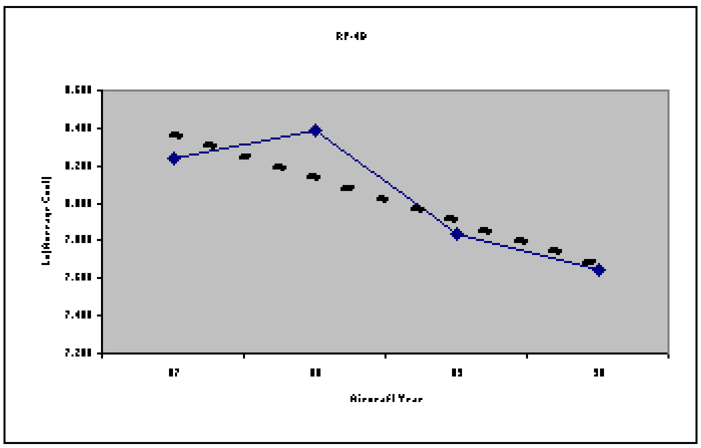


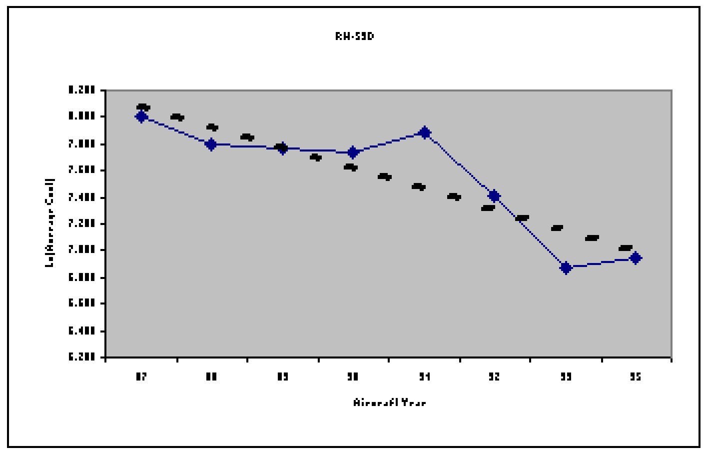


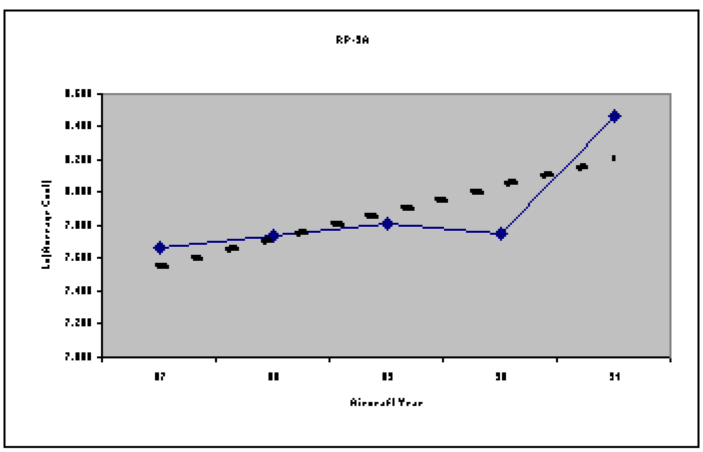


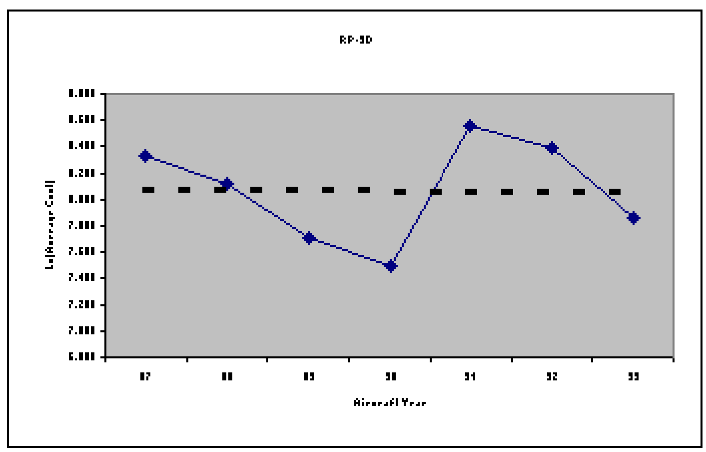

RC-12P

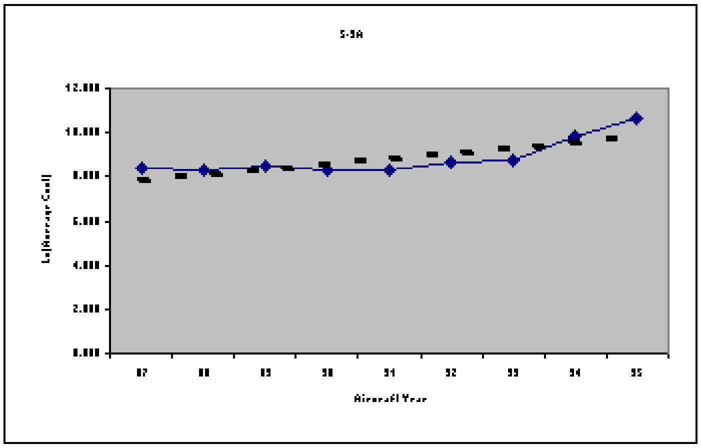

RC-12H

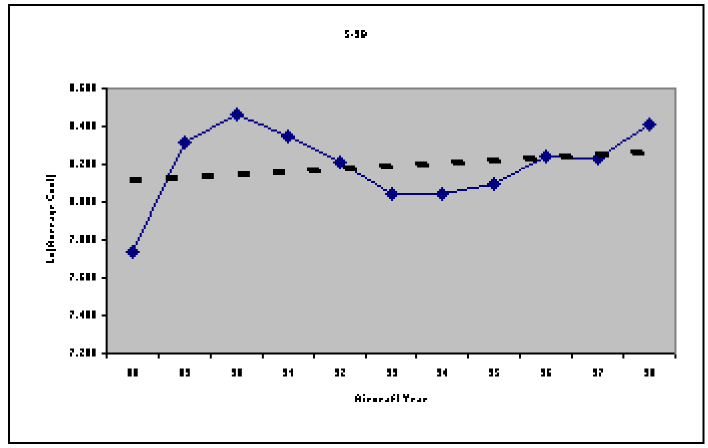

RF-4B

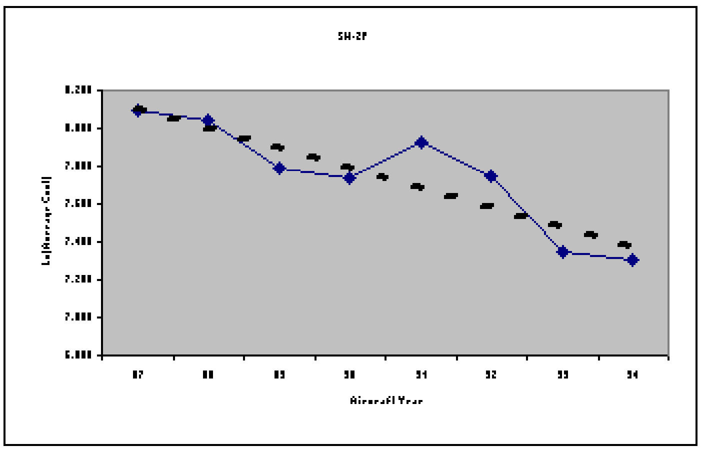

RH-53D

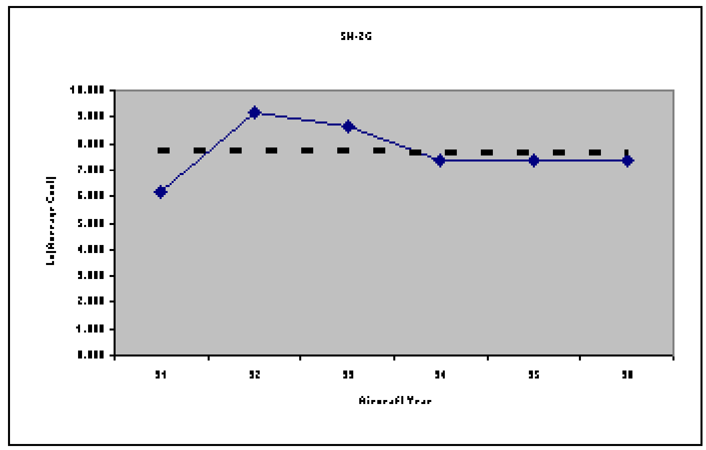


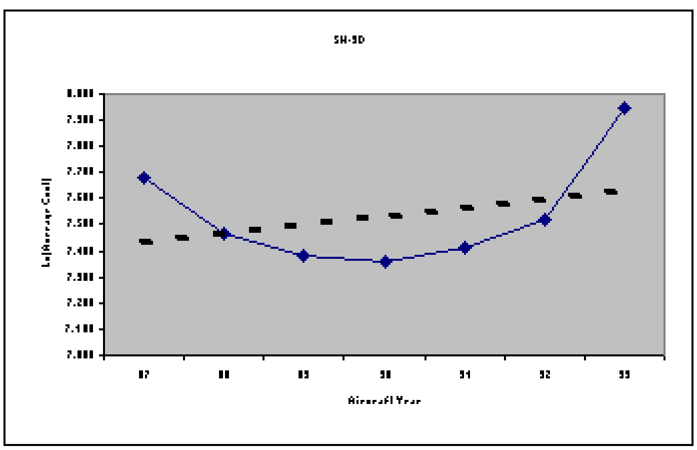


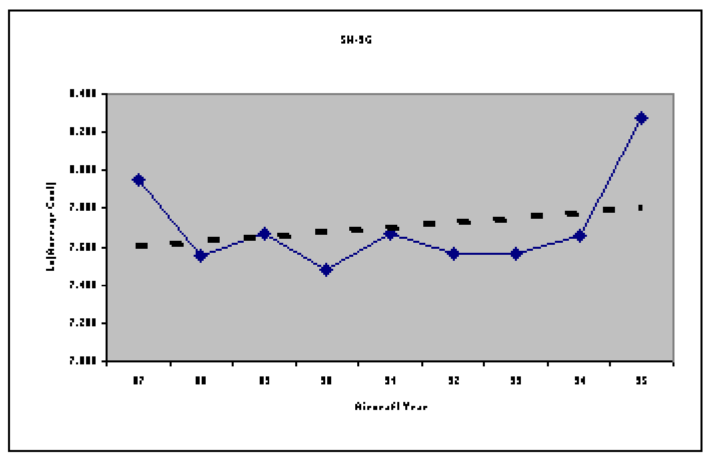

Ln(Average Cost)
Aircraft Year

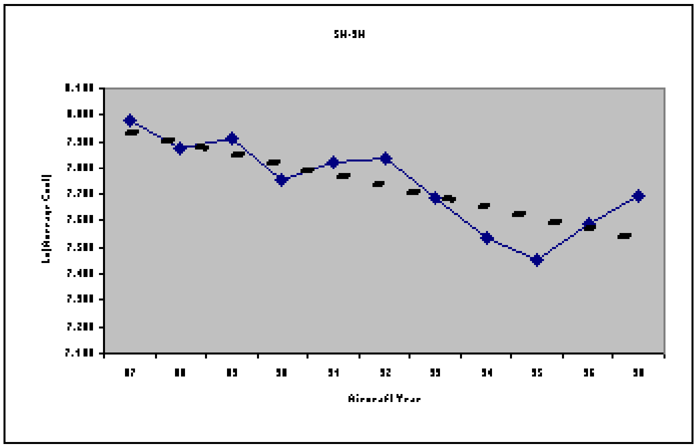

Ln(Average Cost)
Aircraft Year

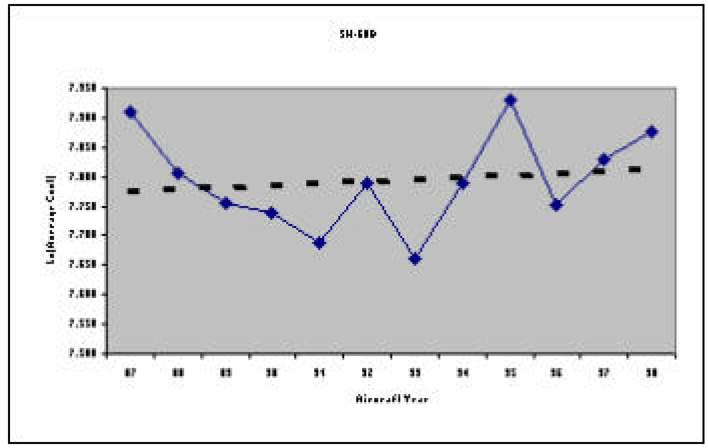

Ln(Average Cost)
Aircraft Year

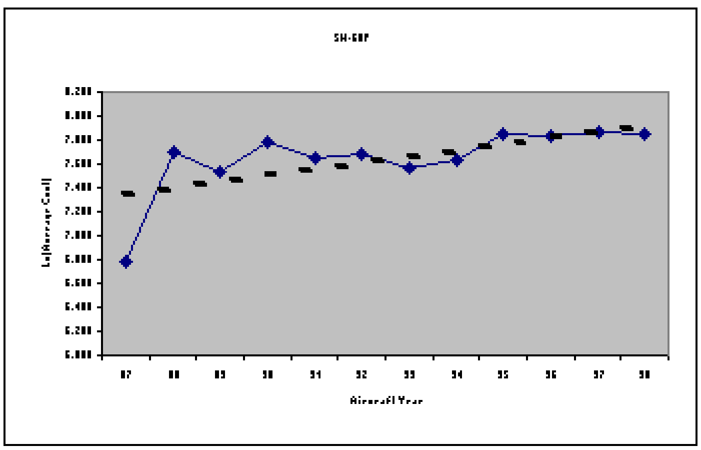

Ln(Average Cost)
Aircraft Year

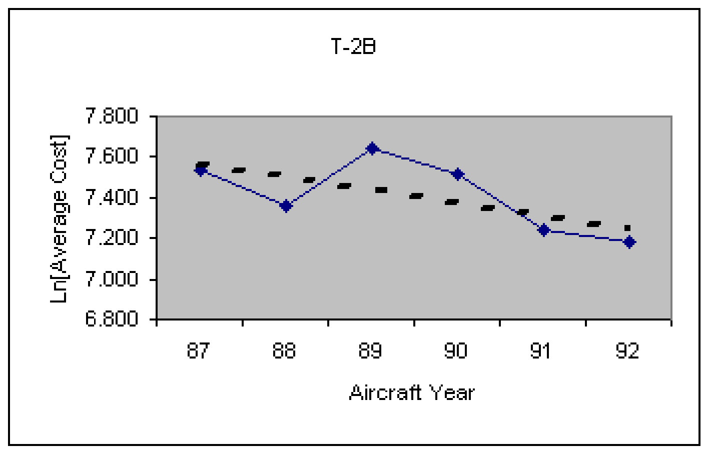

Ln(Average Cost)
Aircraft Year

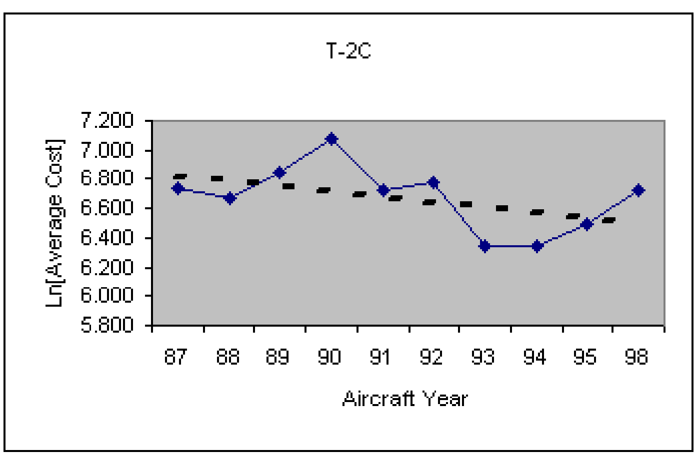

Ln(Average Cost)
Aircraft Year

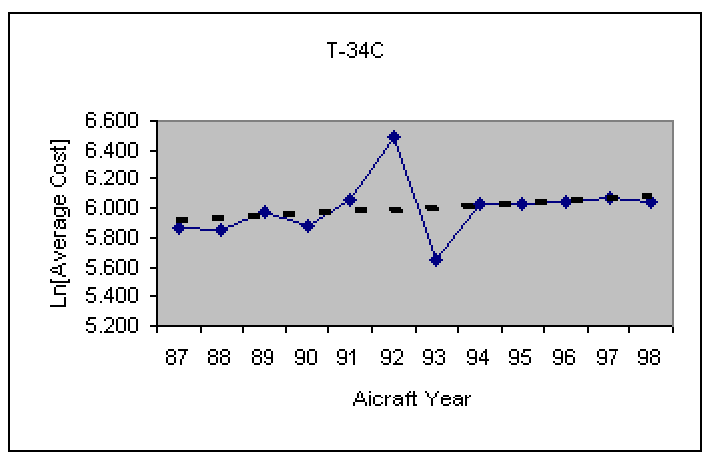


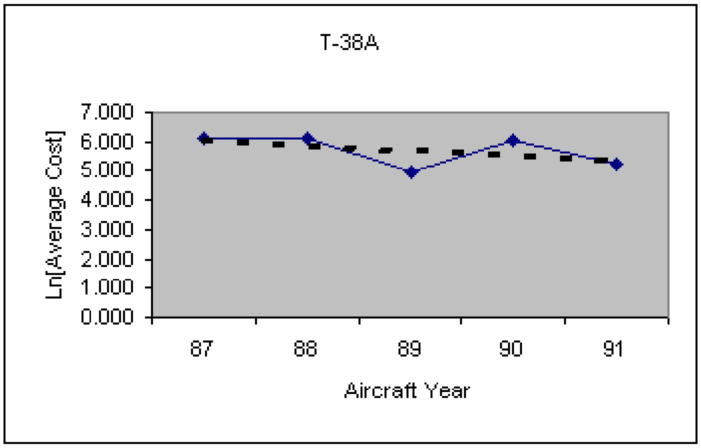


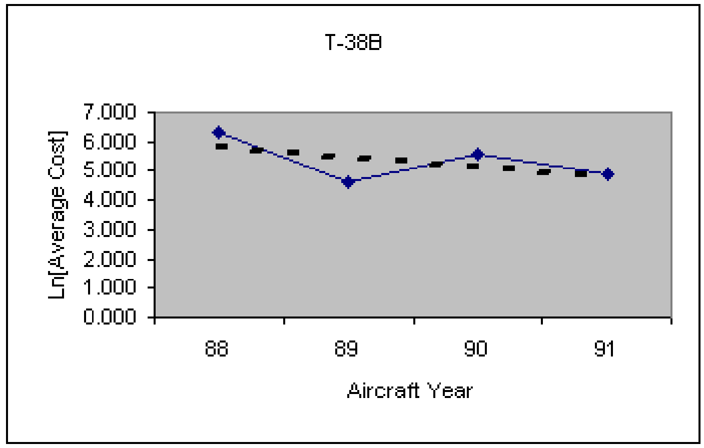


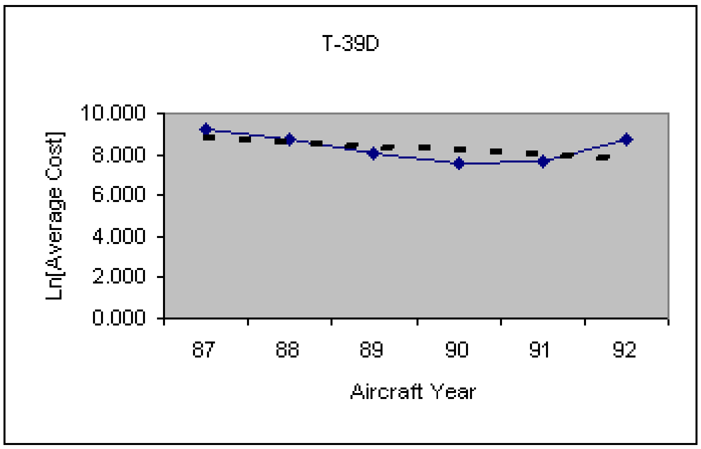

T-2B
7.800
7.600
7.400
7.200
7.000
6.800
Ln[Average Cost]
87
88
89
90
91
92
Aircraft Year

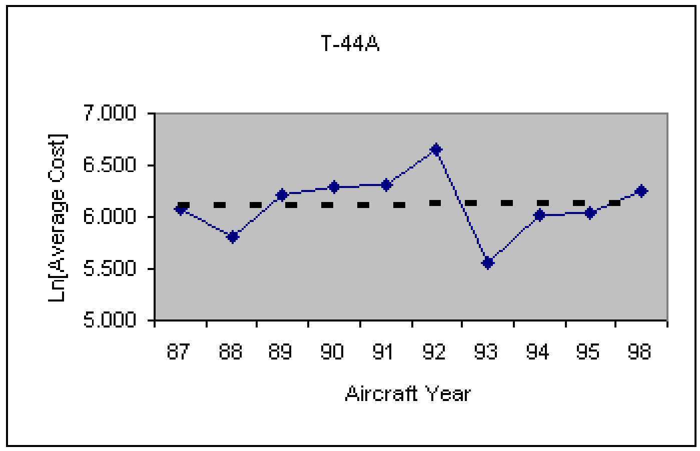

T-2C
7.200
7.000
6.800
6.600
6.400
6.200
6.000
5.800
Ln[Average Cost]
87
88
89
90
91
92
93
94
95
98
Aircraft Year

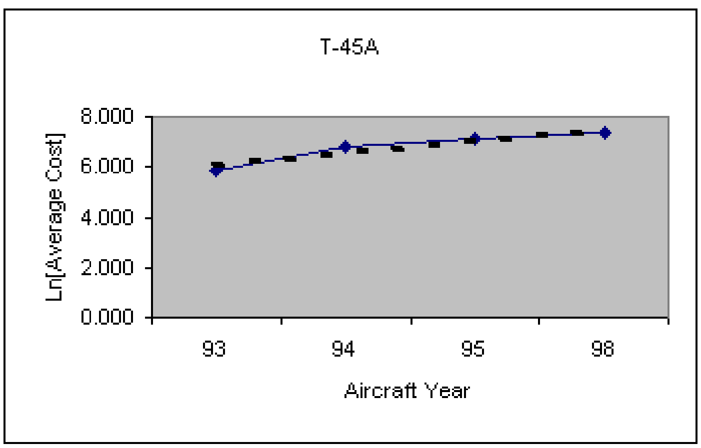

T-34C
6.600
6.400
6.200
6.000
5.800
5.600
5.400
5.200
Ln[Average Cost]
87
88
89
90
91
92
93
94
95
96
97
98
Aicraft Year

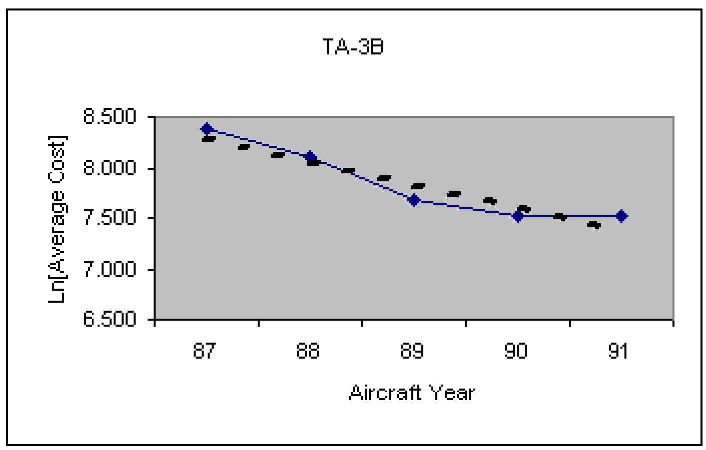

T-38A
Ln[Average Cost]
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
87
88
89
90
91
Aircraft Year

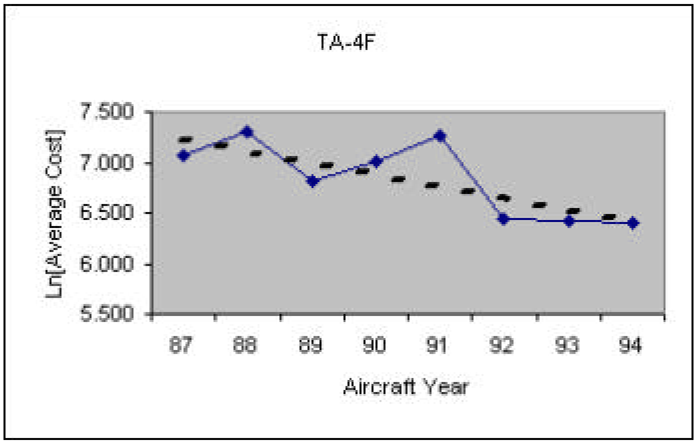

T-38B
Ln[Average Cost]
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
88
89
90
91
Aircraft Year

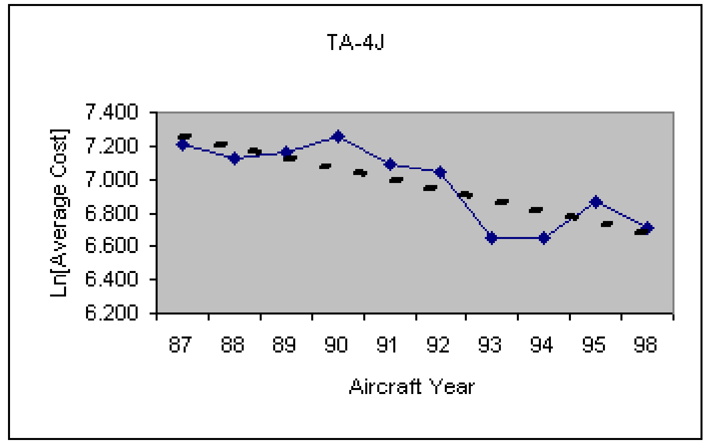

T-39D
Ln[Average Cost]
10.000
8.000
6.000
4.000
2.000
0.000
87
88
89
90
91
92
Aircraft Year

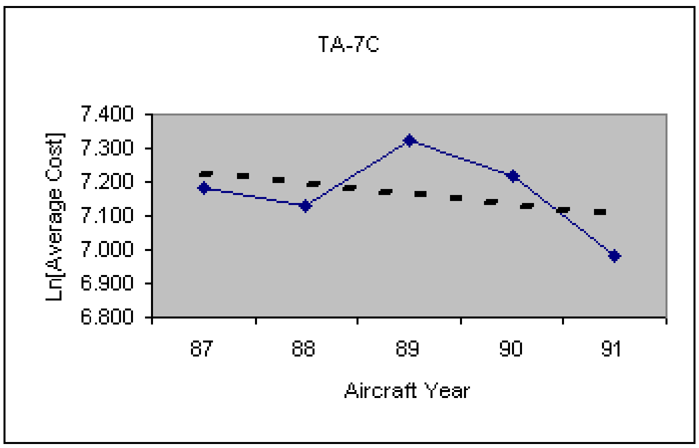

T-44A
Ln[Average Cost]
7.000
6.500
6.000
5.500
5.000
87
88
89
90
91
92
93
94
95
98
Aircraft Year

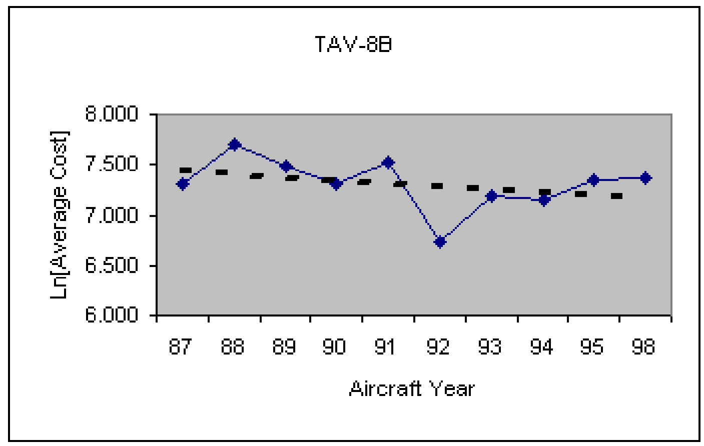

T-45A
Ln[Average Cost]
8.000
6.000
4.000
2.000
0.000
93
94
95
98
Aircraft Year

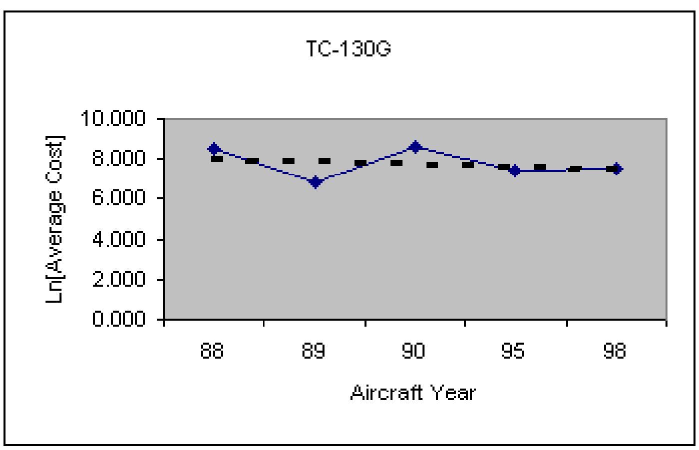

TA-3B
Ln[Average Cost]
8.500
8.000
7.500
7.000
6.500
87
88
89
90
91
Aircraft Year

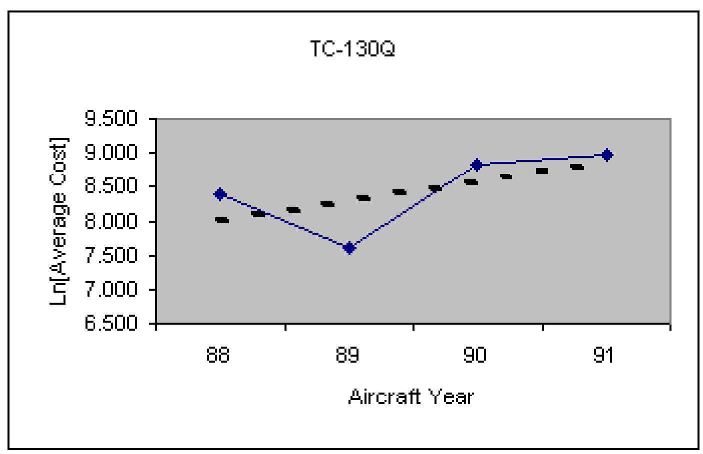

TA-4F
Ln[Average Cost]
7.500
7.000
6.500
6.000
5.500
87
88
89
90
91
92
93
94
Aircraft Year

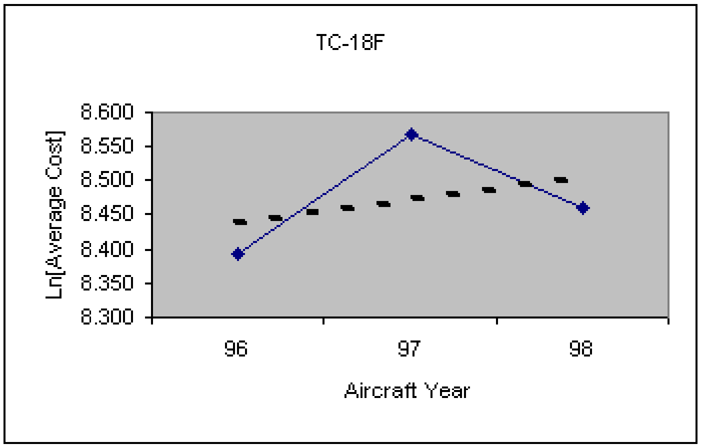

TA-4J
Ln[Average Cost]
7.400
7.200
7.000
6.800
6.600
6.400
6.200
87
88
89
90
91
92
93
94
95
98
Aircraft Year

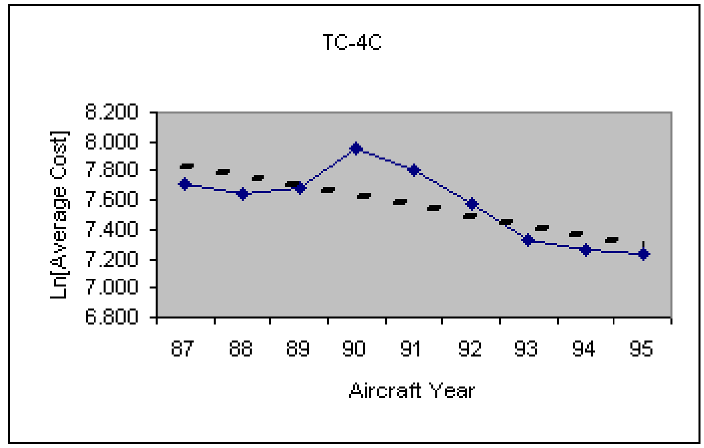

TA-7C
Ln[Average Cost]
7.400
7.300
7.200
7.100
7.000
6.900
6.800
87
88
89
90
91
Aircraft Year

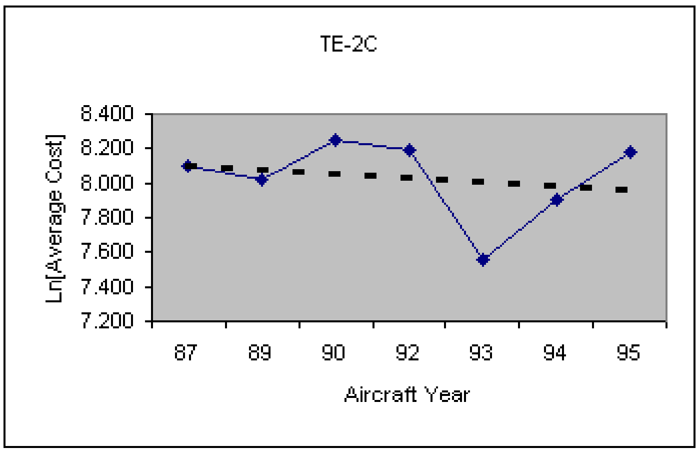

TAV-8B
Ln[Average Cost]
8.000
7.500
7.000
6.500
6.000
87
88
89
90
91
92
93
94
95
98
Aircraft Year

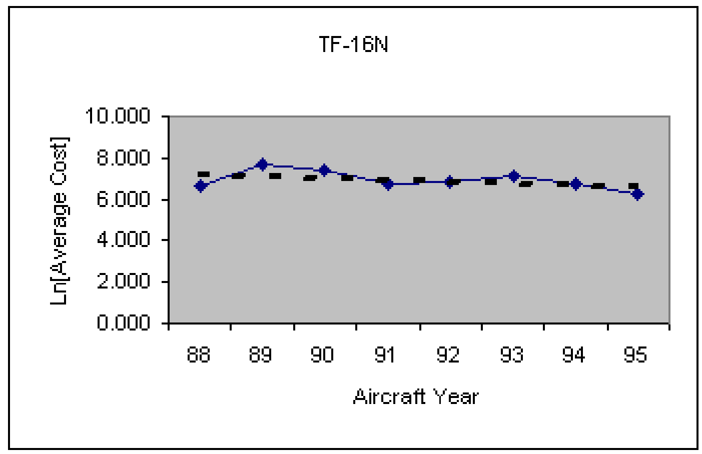

TC-130G
Ln[Average Cost]
10.000
8.000
6.000
4.000
2.000
0.000
88
89
90
95
98
Aircraft Year

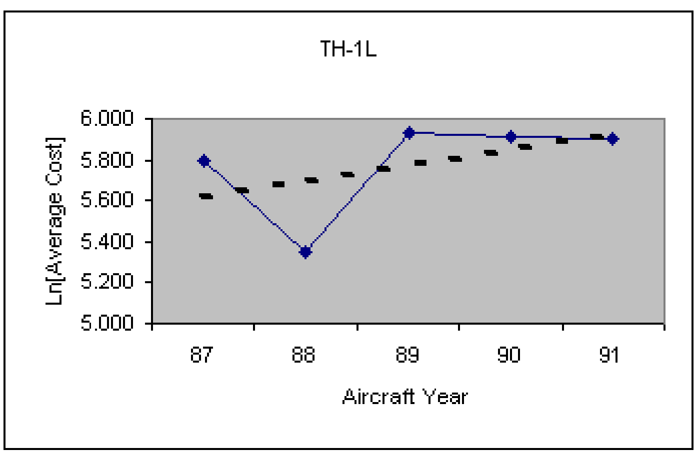

TC-130Q
Ln[Average Cost]
9.500
9.000
8.500
8.000
7.500
7.000
6.500
88
89
90
91
Aircraft Year

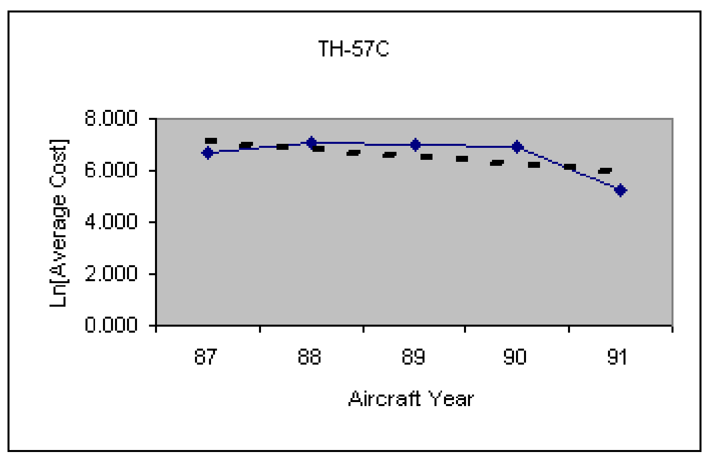

TC-18F
Ln[Average Cost]
8.600
8.550
8.500
8.450
8.400
8.350
8.300
96
97
98
Aircraft Year

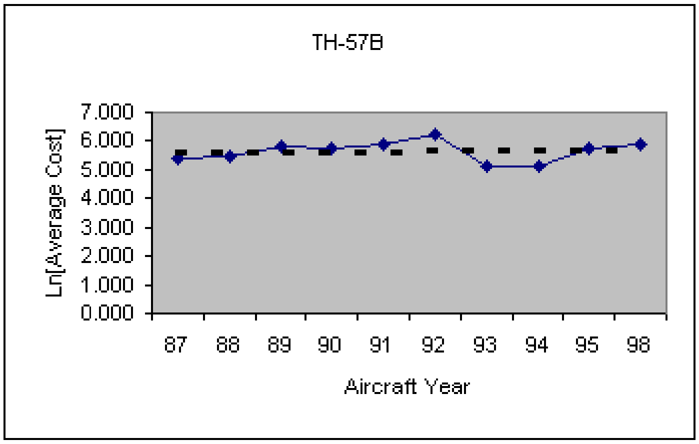

TC-4C
Ln[Average Cost]
8.200
8.000
7.800
7.600
7.400
7.200
7.000
6.800
87
88
89
90
91
92
93
94
95
Aircraft Year

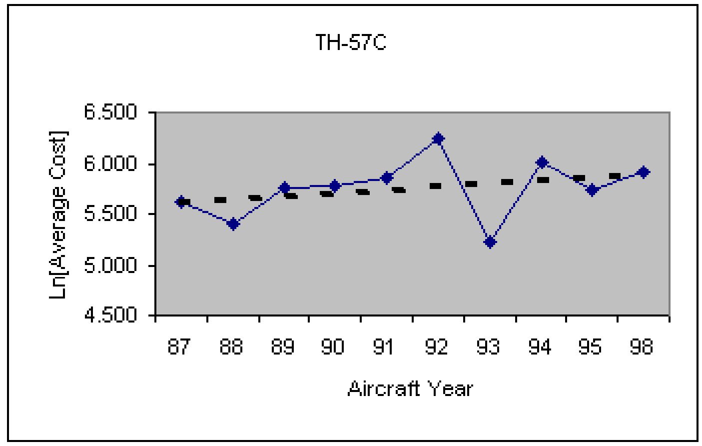

TE-2C
Ln[Average Cost]
8.400
8.200
8.000
7.800
7.600
7.400
7.200
87
89
90
92
93
94
95
Aircraft Year

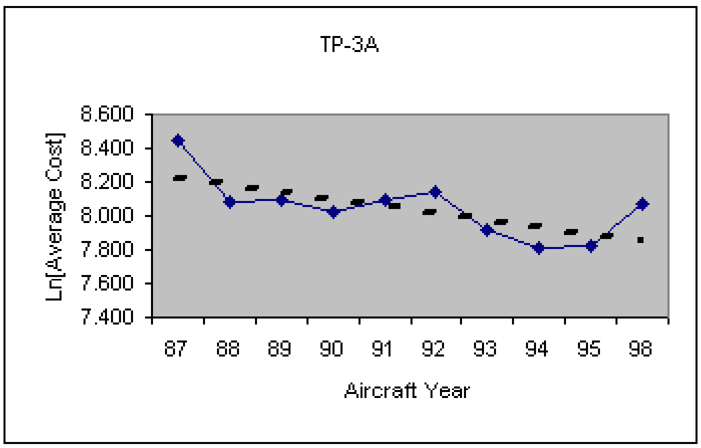

TF-16N
Ln[Average Cost]
10.000
8.000
6.000
4.000
2.000
0.000
88
89
90
91
92
93
94
95
Aircraft Year

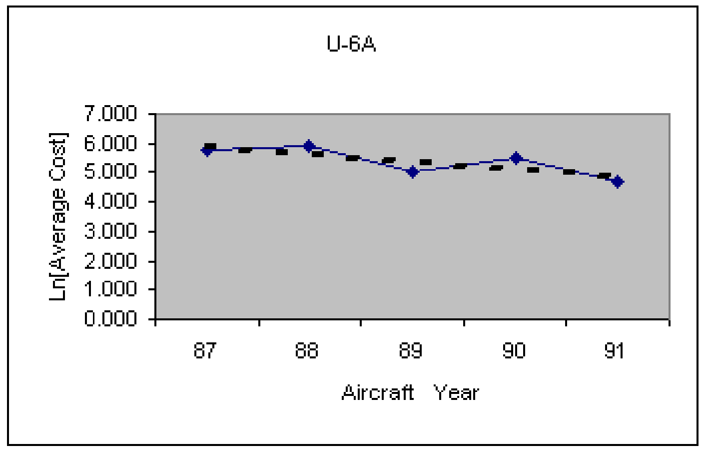

TH-1L
Ln[Average Cost]
6.000
5.800
5.600
5.400
5.200
5.000
87
88
89
90
91
Aircraft Year

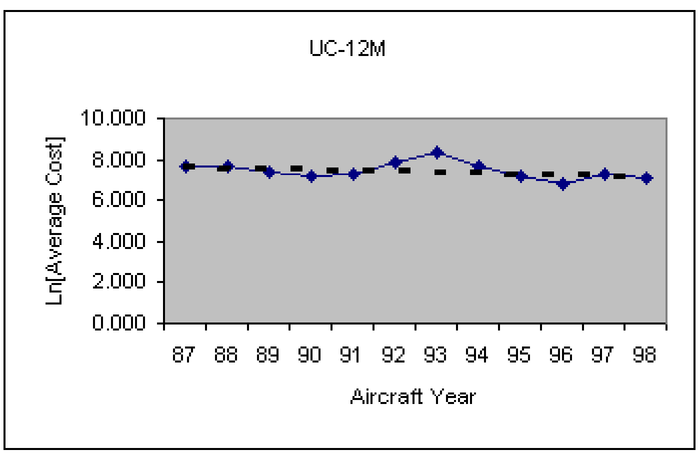

TH-57C
Ln[Average Cost]
8.000
6.000
4.000
2.000
0.000
87
88
89
90
91
Aircraft Year

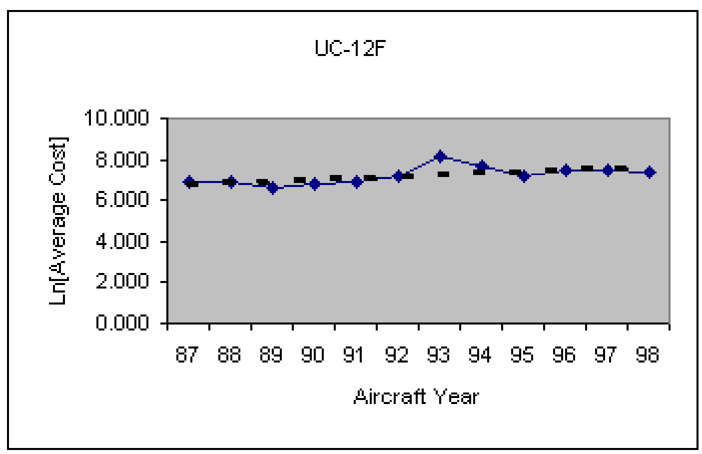

TH-57B
Ln[Average Cost]
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
87 88 89 90 91 92 93 94 95 98
Aircraft Year

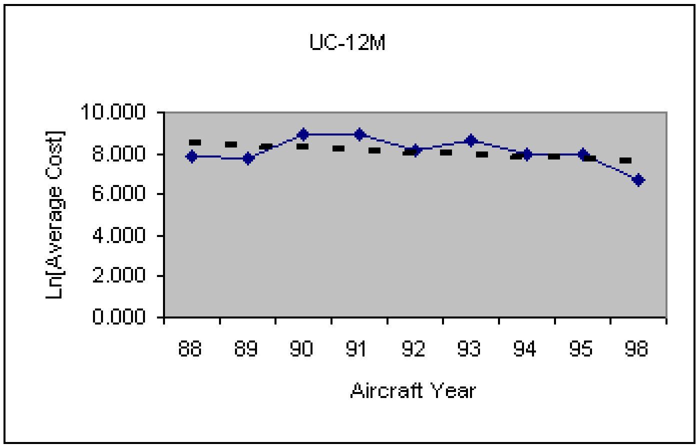

TH-57C
Ln[Average Cost]
6.500
6.000
5.500
5.000
4.500
87 88 89 90 91 92 93 94 95 98
Aircraft Year

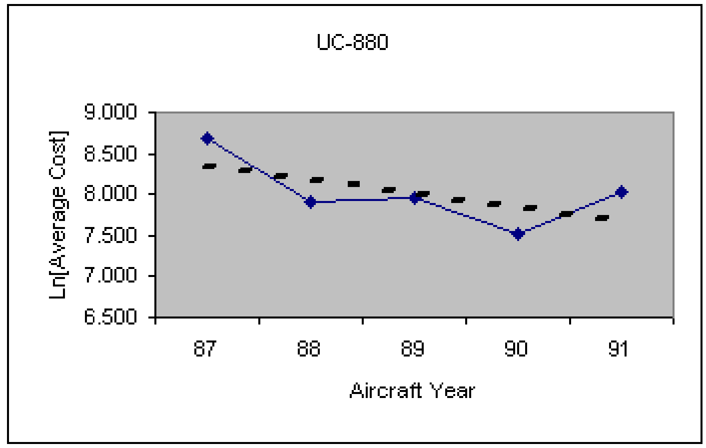

TP-3A
Ln[Average Cost]
8.600
8.400
8.200
8.000
7.800
7.600
7.400
87 88 89 90 91 92 93 94 95 98
Aircraft Year

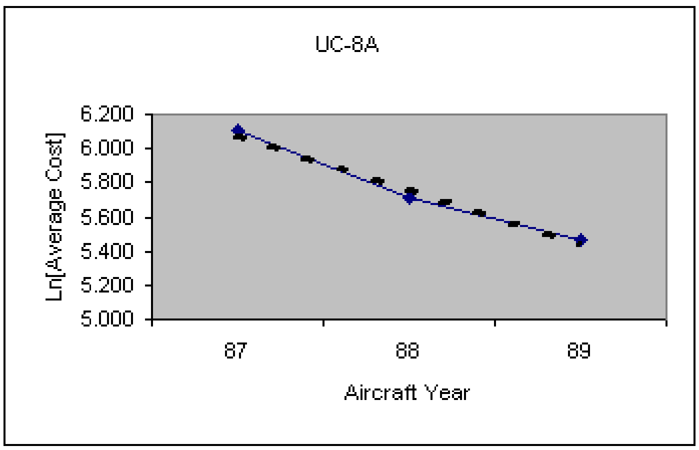

U-6A
Ln[Average Cost]
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
87 88 89 90 91
Aircraft Year

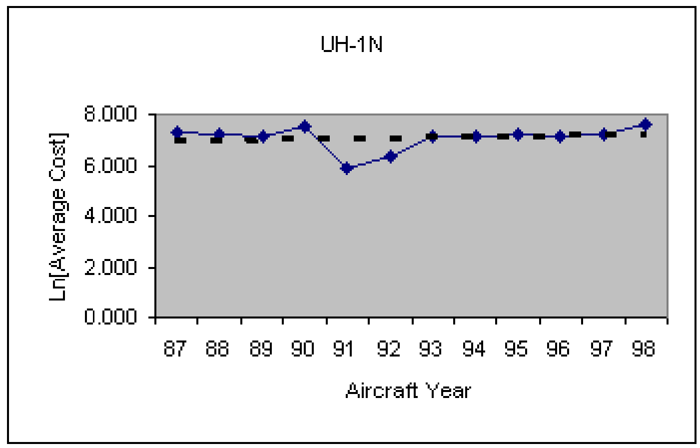

UC-12M
Ln[Average Cost]
10.000
8.000
6.000
4.000
2.000
0.000
87 88 89 90 91 92 93 94 95 96 97 98
Aircraft Year

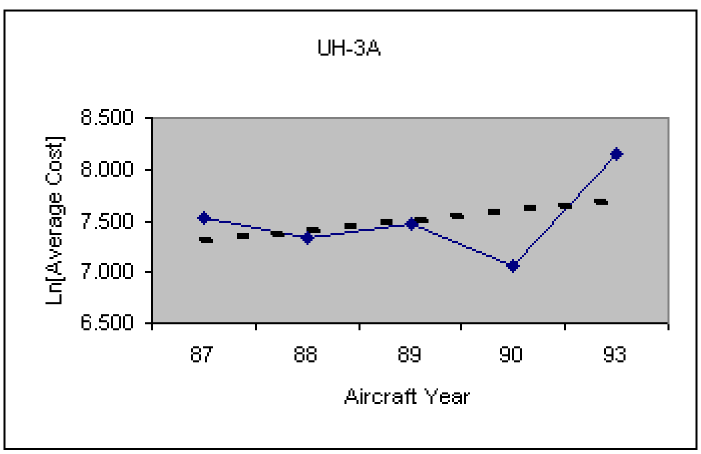

UC-12F
Ln[Average Cost]
10.000
8.000
6.000
4.000
2.000
0.000
87 88 89 90 91 92 93 94 95 96 97 98
Aircraft Year

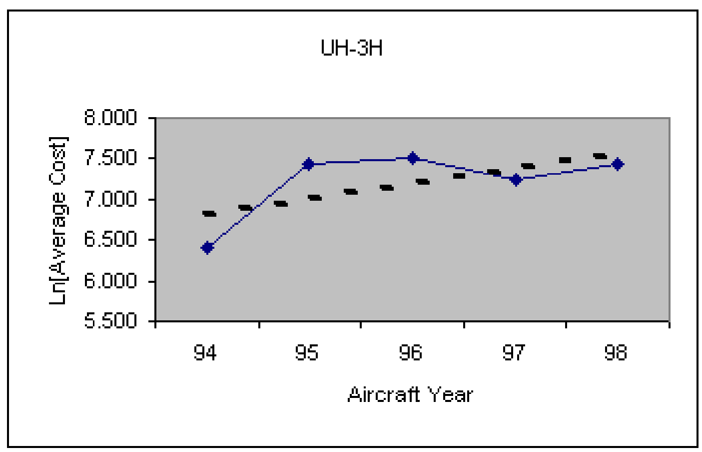

UC-12M
Ln[Average Cost]
10.000
8.000
6.000
4.000
2.000
0.000
88 89 90 91 92 93 94 95 98
Aircraft Year

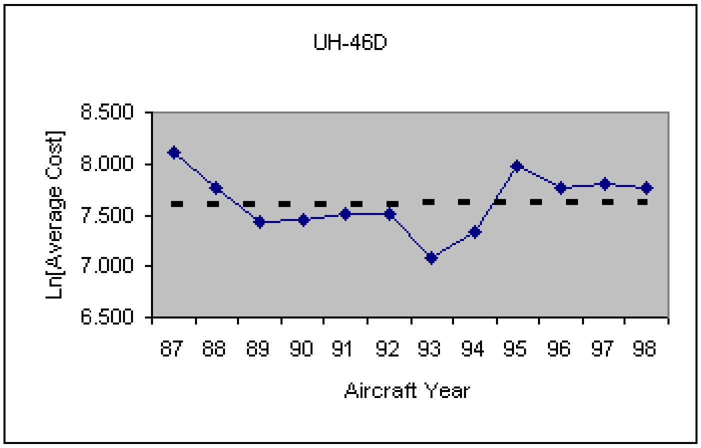

UC-880
Ln[Average Cost]
9.000
8.500
8.000
7.500
7.000
6.500
87 88 89 90 91
Aircraft Year

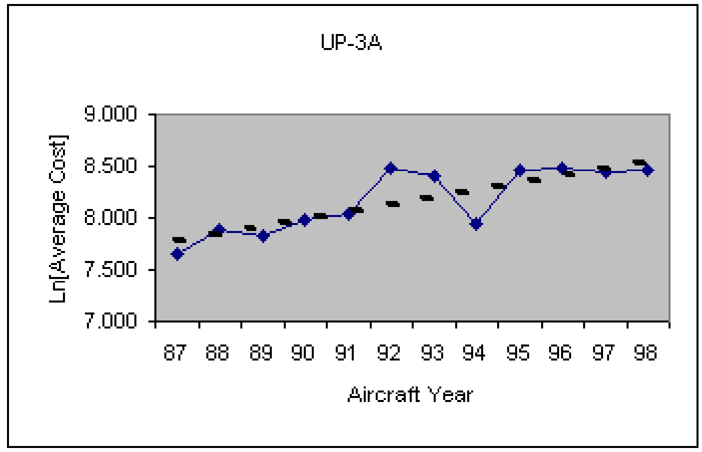

UC-8A
Ln[Average Cost]
6.200
6.000
5.800
5.600
5.400
5.200
5.000
87 88 89
Aircraft Year

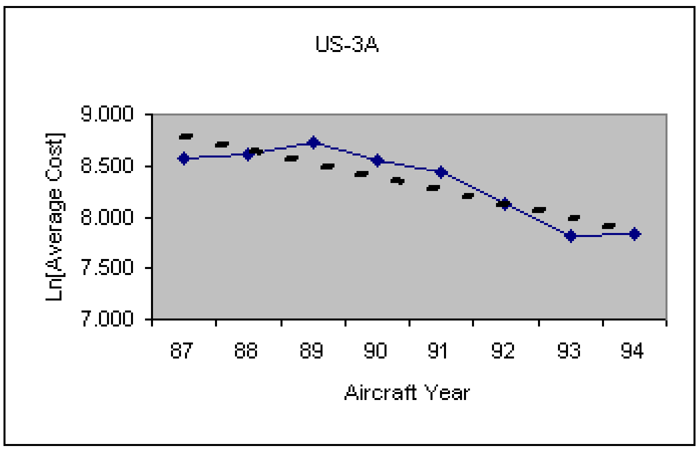

UH-1N
Ln[Average Cost]
8.000
6.000
4.000
2.000
0.000
87 88 89 90 91 92 93 94 95 96 97 98
Aircraft Year

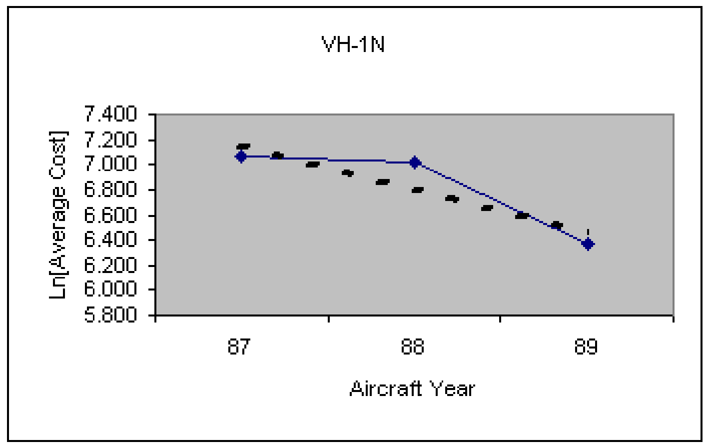

UH-3A
Ln[Average Cost]
8.500
8.000
7.500
7.000
6.500
87 88 89 90 93
Aircraft Year

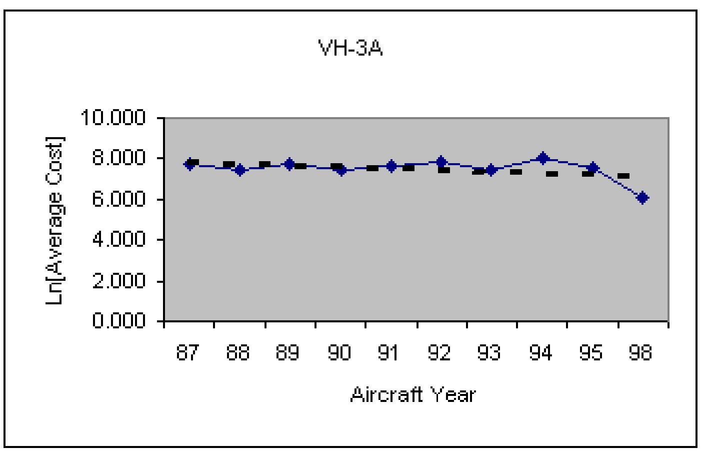

UH-3H
Ln[Average Cost]
8.000
7.500
7.000
6.500
6.000
5.500
94 95 96 97 98
Aircraft Year

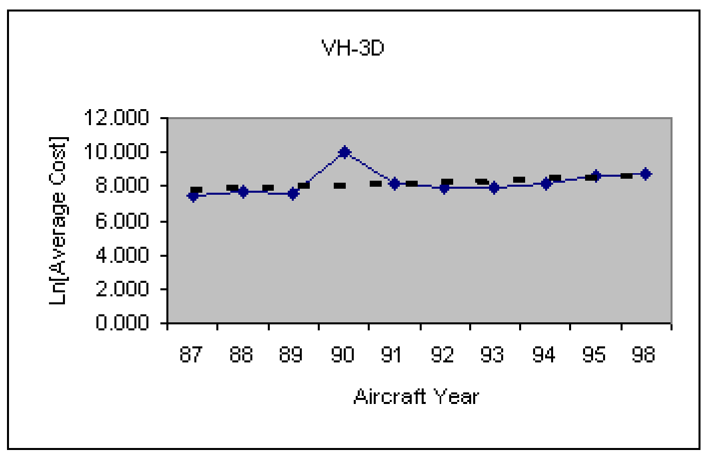

UH-46D
Ln[Average Cost]
8.500
8.000
7.500
7.000
6.500
87 88 89 90 91 92 93 94 95 96 97 98
Aircraft Year

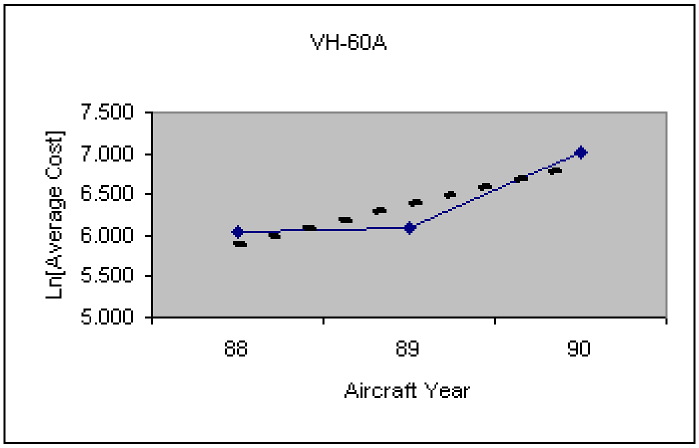

UP-3A
Ln[Average Cost]
9.000
8.500
8.000
7.500
7.000
87 88 89 90 91 92 93 94 95 96 97 98
Aircraft Year

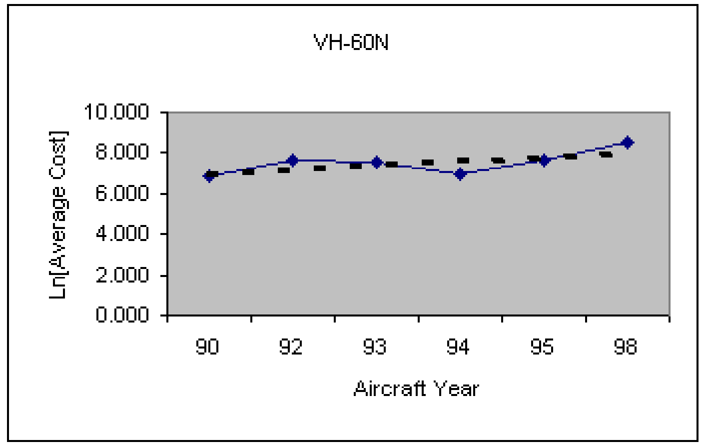

US-3A
Ln[Average Cost]
9.000
8.500
8.000
7.500
7.000
87 88 89 90 91 92 93 94
Aircraft Year

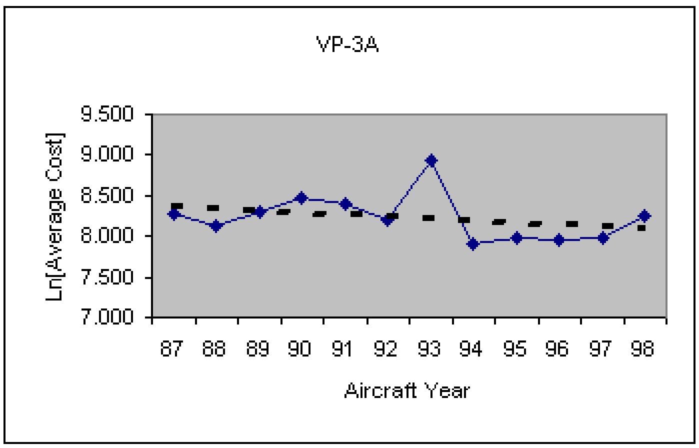

VH-1N
Ln[Average Cost]
7.400
7.200
7.000
6.800
6.600
6.400
6.200
6.000
5.800
87 88 89
Aircraft Year

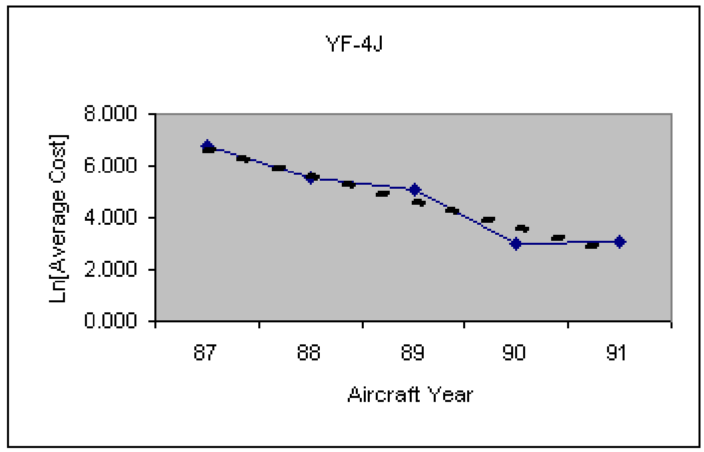

VH-3A
Ln[Average Cost]
10.000
8.000
6.000
4.000
2.000
0.000
87 88 89 90 91 92 93 94 95 98
Aircraft Year


VH-3D
Ln[Average Cost]
12.000
10.000
8.000
6.000
4.000
2.000
0.000
87 88 89 90 91 92 93 94 95 98
Aircraft Year


VH-60A
Ln[Average Cost]
7.500
7.000
6.500
6.000
5.500
5.000
88
89
90
Aircraft Year


VH-60N
Ln[Average Cost]
10.000
8.000
6.000
4.000
2.000
0.000
90
92
93
94
95
98
Aircraft Year


VP-3A
Ln[Average Cost]
9.500
9.000
8.500
8.000
7.500
7.000
87
88
89
90
91
92
93
94
95
96
97
98
Aircraft Year


YF-4J
Ln[Average Cost]
8.000
6.000
4.000
2.000
0.000
87
88
89
90
91
Aircraft Year

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX F. US NAVY AIRCRAFT REGRESSION RESULTS (LN[WEIGHTED AVG. ANNUAL O&S COST] ~ AIRCRAFT YEAR)

Aircraft TMS	P-Value	R^2	SE
A-4E	0.2205	0.2376	0.151
A-4F	0.9465	0.0008	0.3848
A-4M	0.0445	0.5166	0.3178
A-6E	0.0016	0.6881	0.1862
A-7C	0.0509	0.769	1.073
A-7E	0.0183	0.8799	0.105
AH-1J	0.0638	0.5293	0.3177
AH-1W	0.5538	0.0362	0.2389
AV-8B	0.0248	0.4108	0.1872
AV-8C	-	-	-
C-130F	0	0.9778	0.0457
C-130T	0.5723	0.3874	0.1058
C-1A	-	-	-
C-131-H	0.0238	0.953	0.0826
C-20D	0.0522	0.3268	3.228
C-20G	0.3707	0.6976	0.4056
C-2A	0.1137	0.2311	0.1195
CH-46D	0.7279	0.0126	0.2325
CH-46E	0.5613	0.0348	0.2164
CH-53A	0.0683	0.6057	0.3131
CH-53D	0.0088	0.5127	0.2089
CH-53E	0.4680	0.0538	0.1742
CT-39E	0.1729	0.3355	0.1772
CT-39G	0.1220	0.2221	0.308
DC-9B	0.8792	0.0031	0.0988
E-2C	0.8733	0.0027	0.1413
E-6A	0.0078	0.608	0.5233
E-6B	-	-	-
EA-3B	0.3830	0.2574	0.3139
EA-4F	0.0188	0.9628	0.0591
EA-6A	0.8452	0.0084	0.3263
EA-6B	0.4812	0.0508	0.1797
EA-7L	0.0366	0.8126	0.0751
EC-130G	0.1260	0.9613	0.0535

Aircraft TMS	P-Value	R^2	SE
EC-130Q	0.0258	0.7497	0.2348
EP-3A	0.0258	0.8501	0.0534
EP-3B	0.0557	0.8916	0.2955
EP-3E	0.6919	0.0164	0.1655
EP-3J	0.1378	0.7434	0.2051
ERA-3B	0.3399	0.2266	0.2857
ES-3A	0.1091	0.3707	0.6489
F/A-18A	0.0475	0.3377	0.1581
F/A-18B	0.2050	0.1553	0.0686
F/A-18D	0.5269	0.0459	0.1674
F-14A	0.7096	0.0145	0.1636
F-14B	0.1369	0.3852	0.1796
F-14D	0.0143	0.5998	0.3115
F-16N	0.2726	0.1684	0.4859
F-21A	0.2789	0.8201	0.0527
F-4J	0.0376	0.9263	0.1233
F-4S	0.0255	0.7509	0.5572
F-5E	0.2849	0.1256	0.3205
F-5F	0.2280	0.1568	0.2801
HH-1K	0.0543	0.7593	0.1887
HH-1N	0.1862	0.3193	0.2432
HH-3A	0.1550	0.7140	0.7546
HH-46D	0.3089	0.1031	0.1930
HH-60H	0.0200	0.5119	0.3057
HH-60J	-	-	-
KA-3B	0.0170	0.0886	0.2017
KA-6D	0.0141	0.7317	0.1898
KC-130F	0.0269	0.4018	0.1824
KC-130T	0.1708	0.2497	0.3068
MH-53E	0.0254	0.4432	0.2123
NT-34C	0.2146	0.6168	1.8220
O-2A	0.0474	0.9075	0.0199
OA-4M	0.6634	0.0716	0.4385
OV-10A	0.7830	0.0212	0.3324

Aircraft TMS	P-Value	R^2	SE
OH-6B	-	-	-
OV-10D	0.0689	0.5162	0.3635
P-3A	0.2943	0.4981	0.1165
P-3B	0.3992	0.0901	0.5265
P-3C	0.7173	0.0137	0.0797
QF-4N	0.1002	0.6481	0.6431
QF-4B	-	-	-
QF-86F	0.6198	0.1446	1.0090
QT-38A	-	-	-
RC-12F	0.0333	0.9973	0.0233
RC-12M	0.7242	0.0477	1.1650
RF-4B	0.1312	0.7549	0.2103
RH-53D	0.0040	0.7733	0.2228
RP-3A	0.1219	0.6041	0.2399
RP-3D	0.9930	0.0000	0.4275
S-3A	0.0085	0.6522	0.5194
S-3B	0.4528	0.0640	0.2117
SH-2F	0.0030	0.7931	0.1437
SH-2G	0.8768	0.0068	1.2010
SH-3D	0.4484	0.1191	0.2154
SH-3G	0.4863	0.0716	0.2569
SH-3H	0.0036	0.6281	0.1047
SH-60B	0.6614	0.0199	0.0861
SH-60F	0.0189	0.4390	0.2324
T-2B	0.1568	0.4308	0.1550
TF/A-18A	-	-	-
T-2C	0.2339	0.1716	0.2188
T-34B	0.6672	0.0509	0.8724
T-34C	0.3932	0.0738	0.2000
T-38A	0.3767	0.2632	0.5434
T-38B	0.4438	0.3093	0.7787
T-39D	0.2868	0.2738	0.6411
T-39N	-	-	-
T-44A	0.8955	0.0023	0.3146

Aircraft TMS	P-Value	R^2	SE
T-45A	0.1616	0.7029	0.4416
T-47A	-	-	-
TA-3B	0.0133	0.9026	0.1388
TA-4F	0.0289	0.5766	0.2669
TA-4J	0.0524	0.3262	2.3450
TA-7C	0.5162	0.1522	0.1331
TAV-8B	0.4104	0.0862	0.2638
TAV-8A	-	-	-
TC-130G	0.5929	0.1060	0.8326
TC-130Q	0.3809	0.3833	0.5804
TC-18F	0.7548	0.1411	0.1151
TC-4C	0.0206	0.5586	0.1780
TE-2C	0.5890	0.0624	0.2524
TF-16N	0.2113	0.2460	0.4328
TH-1L	0.3894	0.2515	0.2438
TH-57A	0.2594	0.3909	0.6967
TH-57B	0.7289	0.0159	0.3774
TH-57C	0.3665	0.1028	0.2938
TP-3A	0.0576	0.3803	0.1514
U-6A	0.1285	0.5915	0.3754
U-8G	-	-	-
UA-3B	-	-	-
UC-12B	0.2274	0.1419	0.4144
UC-12F	0.0192	0.4375	0.3493
UC-12M	0.1681	0.2524	0.6377
UC-880	0.2488	0.4043	0.3736
UC-8A	0.0827	0.9832	0.0592
UH-1N	0.1757	0.1600	0.6925
UH-3A	0.2767	0.3696	0.3701
UH-3H	0.2457	0.4085	0.4102
UH-46D	0.9463	0.0004	0.3056
UP-3A	0.0009	0.6825	0.1828
UH-60A	-	-	-
UP-3B	0.1487	0.5546	0.1376

Aircraft TMS	P-Value	R^2	SE
US-3A	0.0026	0.8020	0.1741
VH-1N	0.2891	0.8076	0.2413
VH-3A	0.1095	0.2883	0.4730
VH-3D	0.3150	0.1256	0.7428
VH-60A	0.3067	0.7853	0.3527
VH-60N	0.0546	0.6443	0.3923
VP-3A	0.3332	0.0937	0.2874
YF-4J	0.0084	0.9282	0.5102
YSH-60B	-	-	-
YSH-60F	-	-	-
KC-130R	0.0046	0.5681	0.2191
C-9B	0.1286	0.2641	0.1228
F/A-18C	0.0608	0.3378	0.0875
NU-1B	-	-	-
X-26A	-	-	-

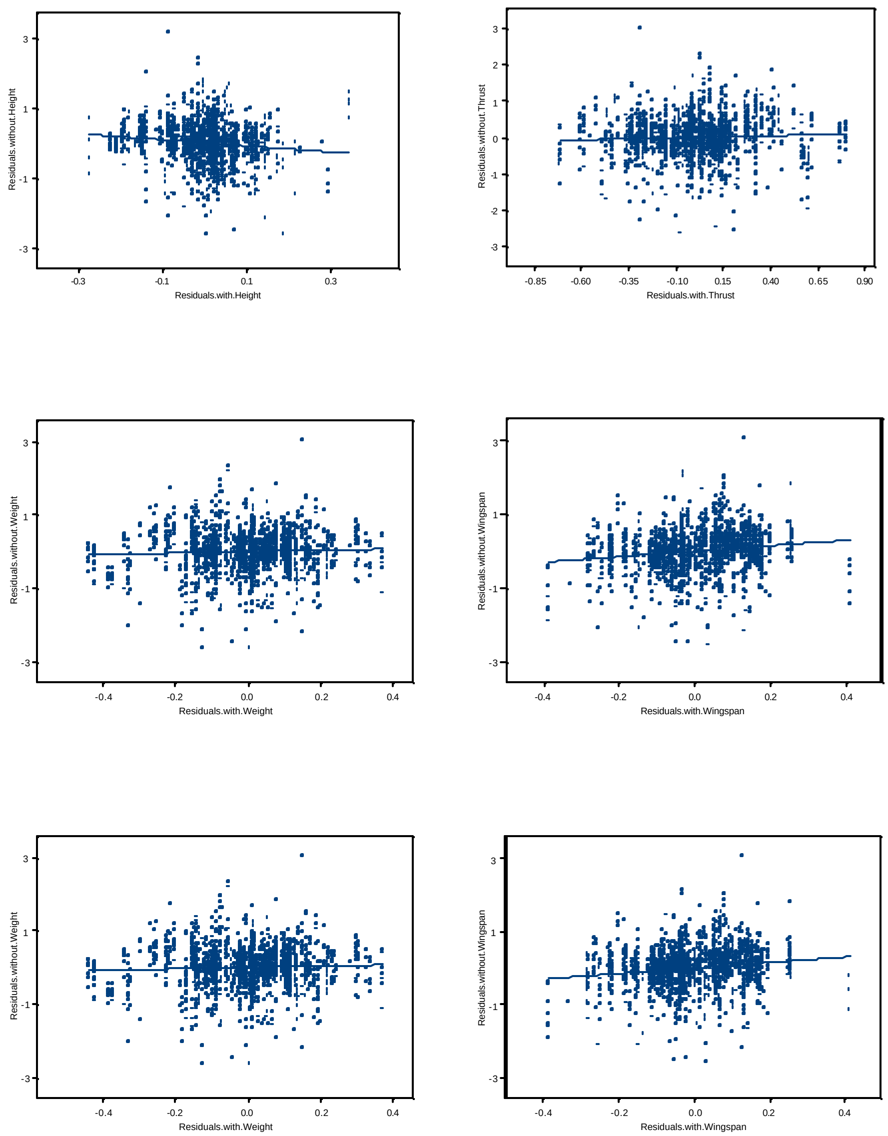
THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX G. MULTIVARIATE REGRESSION RESULT WITH FORWARD INCLUSION METHOD

```
                    *** Stepwise Regression ***

                       *** Linear Model ***

Call: lm(formula = logCOST ~ logWEIGHT + COMMAND + logWSPAN +
       logHEIGHT + CREW + ENGINE + logHRUST + COMMAND:
       logWEIGHT + COMMAND:logWSPAN + COMMAND:CREW +
       logWEIGHT:CREW + COMMAND:ENGINE + logWSPAN:
       ENGINE + COMMAND:logHEIGHT, data = THESIS,
       weights = QUANTITY, na.action = na.exclude)

Residuals:
    Min      1Q  Median     3Q   Max
 -30.31 -0.8349 0.01686 0.9206 13.36

Coefficients:
                            Value Std. Error  t value
             (Intercept)   1.1579   0.5414     2.1387
               logWEIGHT   0.2307   0.0713     3.2335
              COMMANDNET -15.7027   0.9887   -15.8826
         COMMANDOTHERCOM  -5.2029   0.8689    -5.9879
           COMMANDPACFLT   0.5914   0.6164     0.9595
           COMMANDRESERV  -2.2714   0.7742    -2.9338
                logWSPAN   0.8242   0.1449     5.6901
               logHEIGHT  -0.3023   0.1775    -1.7032
                    CREW   0.7111   0.1423     4.9988
                  ENGINE   0.7664   0.1944     3.9423
                logHRUST   0.1636   0.0344     4.7563
     COMMANDNETlogWEIGHT   0.5366   0.1235     4.3457
COMMANDOTHERCOMlogWEIGHT   0.3297   0.0991     3.3290
  COMMANDPACFLTlogWEIGHT   0.0334   0.0475     0.7025
  COMMANDRESERVlogWEIGHT   0.3319   0.0667     4.9719
      COMMANDNETlogWSPAN   2.1226   0.2835     7.4866
 COMMANDOTHERCOMlogWSPAN   1.7688   0.2690     6.5760
   COMMANDPACFLTlogWSPAN   0.0544   0.1442     0.3776
   COMMANDRESERVlogWSPAN   0.1856   0.1821     1.0192
          COMMANDNETCREW  -0.0283   0.0834    -0.3395
     COMMANDOTHERCOMCREW  -0.0273   0.0372    -0.7351
       COMMANDPACFLTCREW   0.0500   0.0180     2.7753
       COMMANDRESERVCREW   0.0696   0.0243     2.8668
          logWEIGHT:CREW  -0.0549   0.0124    -4.4086
        COMMANDNETENGINE  -2.1720   0.1330   -16.3356
   COMMANDOTHERCOMENGINE  -0.2649   0.1475    -1.7963
     COMMANDPACFLTENGINE  -0.0191   0.0731    -0.2614
     COMMANDRESERVENGINE  -0.2212   0.0808    -2.7383
         logWSPAN:ENGINE  -0.1944   0.0489    -3.9767
     COMMANDNETlogHEIGHT   2.3058   0.5298     4.3519
COMMANDOTHERCOMlogHEIGHT  -1.8094   0.4555    -3.9719
  COMMANDPACFLTlogHEIGHT  -0.4530   0.2238    -2.0244
  COMMANDRESERVlogHEIGHT  -0.8186   0.3427    -2.3888
```

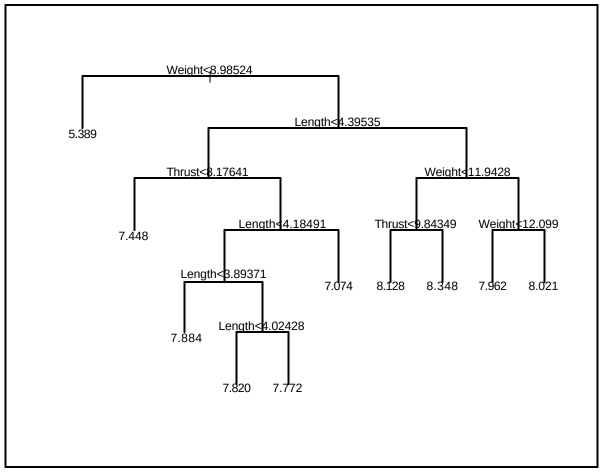
```
                           Pr(>|t|)
              (Intercept)   0.0326
                logWEIGHT   0.0012
               COMMANDNET   0.0000
          COMMANDOTHERCOM   0.0000
            COMMANDPACFLT   0.3374
            COMMANDRESERV   0.0034
                  logWSPAN   0.0000
                logHEIGHT   0.0887
                     CREW   0.0000
                   ENGINE   0.0001
                  logHRUST   0.0000
      COMMANDNETlogWEIGHT   0.0000
 COMMANDOTHERCOMlogWEIGHT   0.0009
   COMMANDPACFLTlogWEIGHT   0.4825
   COMMANDRESERVlogWEIGHT   0.0000
       COMMANDNETlogWSPAN   0.0000
  COMMANDOTHERCOMlogWSPAN   0.0000
    COMMANDPACFLTlogWSPAN   0.7058
    COMMANDRESERVlogWSPAN   0.3083
           COMMANDNETCREW   0.7343
      COMMANDOTHERCOMCREW   0.4624
        COMMANDPACFLTCREW   0.0056
        COMMANDRESERVCREW   0.0042
           logWEIGHT:CREW   0.0000
         COMMANDNETENGINE   0.0000
    COMMANDOTHERCOMENGINE   0.0726
      COMMANDPACFLTENGINE   0.7938
      COMMANDRESERVENGINE   0.0062
          logWSPAN:ENGINE   0.0001
      COMMANDNETlogHEIGHT   0.0000
 COMMANDOTHERCOMlogHEIGHT   0.0001
   COMMANDPACFLTlogHEIGHT   0.0431
   COMMANDRESERVlogHEIGHT   0.0170

Residual standard error: 1.916 on 1857 degrees of freedom
Multiple R-Squared: 0.7719
F-statistic: 196.4 on 32 and 1857 degrees of freedom, the p-value is 0
```

APPENDIX H. LEVERAGE PLOTS FOR PRESUMED INDEPENDENT VARIABLES

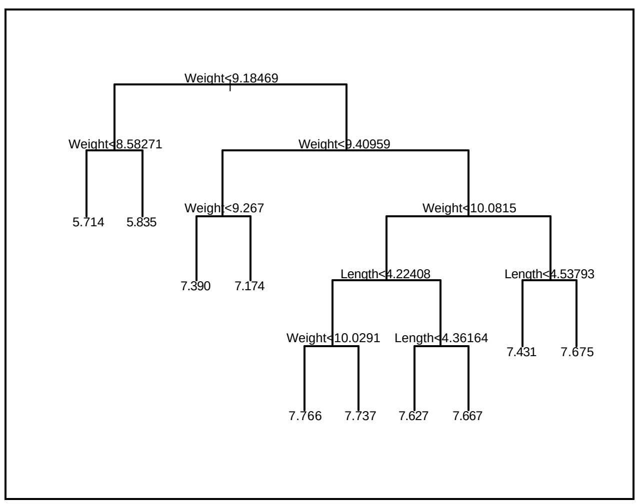


THIS PAGE INTENTIONALLY LEFT BLANK

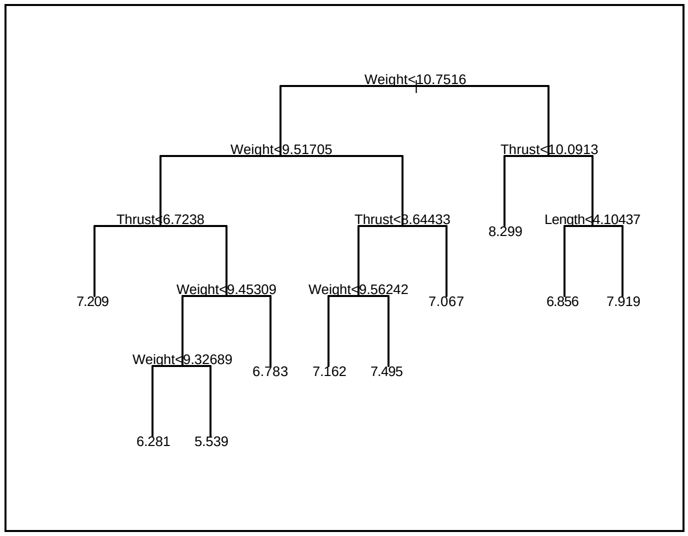
APPENDIX I. TREE-BASED MODELS FOR NON-RESERVE AIRCRAFT CATEGORIES (IN NATURAL LOG SCALE)




```
            *** Tree Model ***  For Non-Reserve Cargo Aircraft
Regression tree:
tree(formula = Average.Cost ~ Length + Weight + Thrust, data =NonReserveCargo,
na.action = na.exclude, mincut = 5, minsize = 10, mindev = 0.01)
Number of terminal nodes:  10
Residual mean deviance:  0.3569 = 87.44 / 245
```

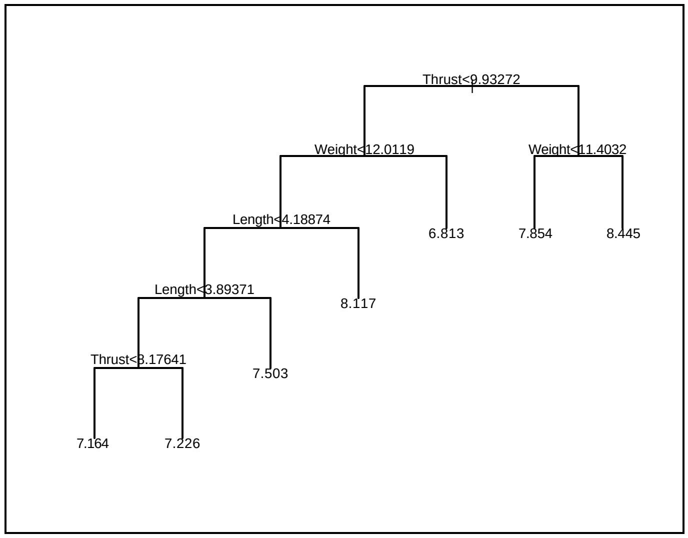



```
          *** Tree Model *** For Non-Reserve Helo Aircraft
Regression tree:
snip.tree(tree = tree(formula = Average.Cost ~ Length + Weight + Thrust, data =
      NonReserveHelo, weights = quantity, na.action = na.exclude, mincut = 5,
      minsize = 10, mindev = 0.01), nodes = c(30, 56))
Variables actually used in tree construction:[1] "Weight" "Length"
Number of terminal nodes:  10
Residual mean deviance:  2.632 = 1192 / 453
```

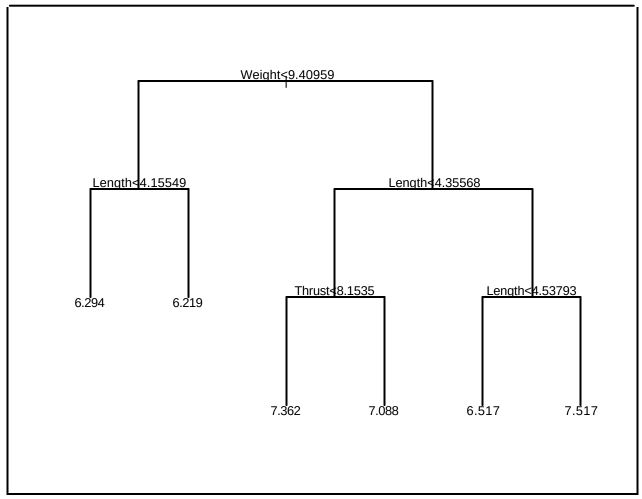



```
          *** Tree Model *** For Non-Reserve Other Aircraft
Regression tree:
snip.tree(tree = tree(formula = Average.Cost ~ Length + Weight + Thrust, data =
       NonReserveOther, na.action = na.exclude, mincut = 5, minsize = 10, mindev
        = 0.01), nodes = c(21, 36, 15, 11, 6))
Number of terminal nodes:  10
Residual mean deviance:  0.3762 = 199.7 / 531
```

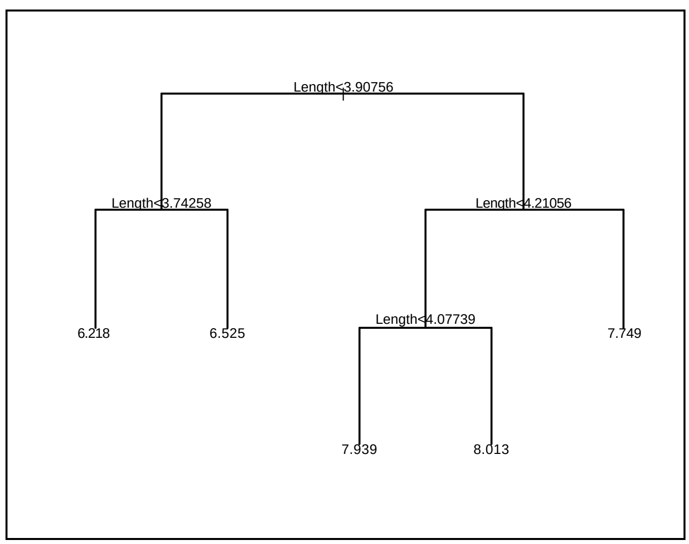
APPENDIX J. TREE-BASED MODELS FOR RESERVE AIRCRAFT CATEGORIES (IN NATURAL LOG SCALE)




```
          *** Tree Model *** For Reserve Cargo Aircraft
Regression tree:
tree(formula = Average.Cost ~ Length + Weight + Thrust, data = ReserveCargo,
       weights = quantity, na.action = na.exclude, mincut = 5, minsize = 10,
       mindev = 0.01)
Number of terminal nodes:  7
Residual mean deviance:  0.8218 = 62.46 / 76
```




```
           *** Tree Model *** For Reserve Helo Aircraft
Regression tree:
tree(formula = Average.Cost ~ Length + Weight + Thrust, data = ReserveHelo,
      weights= quantity, na.action = na.exclude, mincut = 5, minsize = 10,
      mindev  =0.01)
Number of terminal nodes:  6
Residual mean deviance:  4.091 = 253.6 / 62
```




```
          *** Tree Model *** For Reserve Other Aircraft
Regression tree:
tree(formula = Average.Cost ~ Length + Weight + Thrust, data = ReserveOther,
       weights = quantity, na.action = na.exclude, mincut = 5, minsize = 10,
       mindev = 0.01)
Variables actually used in tree construction:[1] "Length"
Number of terminal nodes:  5
Residual mean deviance:  1.73 = 107.3 / 62
```

APPENDIX K. UNIVARIATE REGRESSION OUTPUTS FOR RESERVE AND NON-RESERVE AIRCRAFT CATEGORIES

A. NON-RESERVE

Model Form: **Log-Linear Model** **CARGO**
Number of Observations: 255
Equation in Unit Space: Cost = 130.39 * LENGTH ^ 0.685

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	4.871	0.421	11.574	0.0000
LENGTH	0.685	0.101	6.791	0.0000

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	21.484	21.484	46.121	0.00
Residuals (Errors) (SSE)	253	117.855	0.466		
Total (SST)	254	139.339			

Pairwise Correlation Matrix

	LN(Cost)	LN(length)
LN(Cost)	1.000	0.300
LN(length)	0.300	1.000

Predictive Measures in Unit	Space		
Average Actual Cost	2816.926		
Standard Error (SE)	1848.587	97.89%	-49.47%
Coefficient of Variation (CV)	65.60%		
Adjusted R-Squared	1.10%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **CARGO**

Number of Observations: 255

Equation in Unit Space: Cost = 116.848 * WEIGHT ^ 0.278

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	4.761	0.413	11.525	0.0000
WEIGHT	0.278	0.039	7.185	0.0000

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.676	16.90%	16.60%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	23.615	23.615	51.629	0.00
Residuals (Errors) (SSE)	253	115.724	0.457		
Total (SST)	254	139.339			

Pairwise Correlation Matrix

	LN(Cost)	LN(WEIGHT)
LN(Cost)	1.000	0.239
LN(WEIGHT)	0.239	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	2816.926		
Standard Error (SE)	1880.537	96.66%	-49.15%
Coefficient of Variation (CV)	66.80%		
Adjusted R-Squared	-2.30%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **CARGO**

Number of Observations: 255

Equation in Unit Space: Cost = 159.645 * THRUST ^ 0.298

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	5.073	0.366	13.861	0.0000
THRUST	0.298	0.041	7.263	0.0000

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.675	17.30%	16.90%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	24.042	24.042	52.755	0.00
Residuals (Errors) (SSE)	253	115.297	0.456		
Total (SST)	254	139.339			

Pairwise Correlation Matrix

	LN(Cost)	LN(THRUST)
LN(Cost)	1.000	0.218
LN(THRUST)	0.218	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	2816.926		
Standard Error (SE)	1888.309	96.42%	-49.09%
Coefficient of Variation (CV)	67.00%		
Adjusted R-Squared	-3.10%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **HELO**

Number of Observations: 463

Equation in Unit Space: Cost = 3.844 * LENGTH ^ 1.413

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	1.346	0.591	2.279	0.0231
LENGTH	1.413	0.138	10.231	0.0000

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.667	18.50%	18.30%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	46.51	46.51	104.665	0.00
Residuals (Errors) (SSE)	461	204.855	0.444		
Total (SST)	462	251.365			

Pairwise Correlation Matrix

	LN(Cost)	LN(LENGTH)
LN(Cost)	1.000	0.122
LN(LENGTH)	0.122	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	2061.255		
Standard Error (SE)	1878.924	94.76%	-48.66%
Coefficient of Variation (CV)	91.20%		
Adjusted R-Squared	-5.40%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **HELO**

Number of Observations: 463

Equation in Unit Space: Cost = 19.03 * WEIGHT ^ 0.448

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	2.946	0.430	6.855	0.0000
WEIGHT	0.448	0.043	10.354	0.0000

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.665	18.90%	18.70%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	47.422	47.422	107.196	0.00
Residuals (Errors) (SSE)	461	203.942	0.442		
Total (SST)	462	251.365			

Pairwise Correlation Matrix

	LN(Cost)	LN(WEIGHT)
LN(Cost)	1.000	0.105
LN(WEIGHT)	0.105	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	2061.255		
Standard Error (SE)	1871.644	94.47%	-48.58%
Coefficient of Variation (CV)	90.80%		
Adjusted R-Squared	-4.60%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **HELO**

Number of Observations: 463

Equation in Unit Space: Cost = 39.114 * THRUST ^ 0.457

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	3.666	0.337	10.871	0.0000
THRUST	0.457	0.041	11.067	0.0000

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.656	21.00%	20.80%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	52.764	52.764	122.477	0.00
Residuals (Errors) (SSE)	461	198.601	0.431		
Total (SST)	462	251.365			

Pairwise Correlation Matrix

	LN(Cost)	LN(THRUST)
LN(Cost)	1.000	0.093
LN(THRUST)	0.093	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	2061.255		
Standard Error (SE)	1874.429	92.78%	-48.13%
Coefficient of Variation (CV)	90.90%		
Adjusted R-Squared	-4.90%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **OTHER**

Number of Observations: 541

Equation in Unit Space: Cost = 14.705 * LENGTH ^ 1.209

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	2.688	0.282	9.536	0.0000
LENGTH	1.209	0.069	17.631	0.0000

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.773	36.60%	36.50%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	185.741	185.741	310.845	0.00
Residuals (Errors) (SSE)	539	322.071	0.598		
Total (SST)	540	507.812			

Pairwise Correlation Matrix

	LN(Cost)	LN(LENGTH)
LN(Cost)	1.000	0.515
LN(LENGTH)	0.515	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	3005.188		
Standard Error (SE)	2264.963	116.63%	-53.84%
Coefficient of Variation (CV)	75.40%		
Adjusted R-Squared	20.10%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **OTHER**

Number of Observations: 541

Equation in Unit Space: Cost = 8.681 * WEIGHT ^ 0.521

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	2.161	0.276	7.818	0.0000
WEIGHT	0.521	0.026	19.891	0.0000

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.737	42.30%	42.20%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	214.963	214.963	395.649	0.00
Residuals (Errors) (SSE)	539	292.849	0.543		
Total (SST)	540	507.812			

Pairwise Correlation Matrix

	LN(Cost)	LN(WEIGHT)
LN(Cost)	1.000	0.535
LN(WEIGHT)	0.535	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	3005.188		
Standard Error (SE)	2168.269	108.99%	-52.15%
Coefficient of Variation (CV)	72.20%		
Adjusted R-Squared	26.80%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **OTHER**

Number of Observations: 541

Equation in Unit Space: Cost = 69.6 * THRUST ^ 0.375

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	4.243	0.274	15.484	0.0000
THRUST	0.375	0.030	12.451	0.0000

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.855	22.30%	22.20%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	113.438	113.438	155.038	0.00
Residuals (Errors) (SSE)	539	394.374	0.732		
Total (SST)	540	507.812			

Pairwise Correlation Matrix

	LN(Cost)	LN(THRUST)
LN(Cost)	1.000	0.318
LN(THRUST)	0.318	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	3005.188		
Standard Error (SE)	2463.871	135.23%	-57.49%
Coefficient of Variation (CV)	82.00%		
Adjusted R-Squared	5.40%		

B. RESERVE AIRCRAFT

I. Model Form and Equation

Model Form: **Log-Linear Model** **CARGO**

Number of Observations: 83

Equation in Unit Space: Cost = 66.434 * LENGTH ^ 0.794

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	4.196	0.768	5.462	0.0000
LENGTH	0.794	0.177	4.488	0.0000

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.636	19.90%	18.90%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	8.149	8.149	20.142	0.00
Residuals (Errors) (SSE)	81	32.773	0.405		
Total (SST)	82	40.923			

Pairwise Correlation Matrix

	LN(Cost)	LN(LENGTH)
LN(Cost)	1.000	0.589
LN(LENGTH)	0.589	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	2579.324		
Standard Error (SE)	1469.134	88.91%	-47.06%
Coefficient of Variation (CV)	57.00%		
Adjusted R-Squared	22.40%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **CARGO**

Number of Observations: 83

Equation in Unit Space: Cost = 335.743 * WEIGHT ^ 0.165

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	5.816	0.897	6.484	0.0000
WEIGHT	0.165	0.081	2.029	0.0457

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.693	4.80%	3.70%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	1.98	1.98	4.118	0.004
Residuals (Errors) (SSE)	81	38.943	0.481		
Total (SST)	82	40.923			

Pairwise Correlation Matrix

	LN(Cost)	LN(WEIGHT)
LN(Cost)	1.000	0.154
LN(WEIGHT)	0.154	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	2579.324		
Standard Error (SE)	1686.370	100.05%	-50.01%
Coefficient of Variation (CV)	65.40%		
Adjusted R-Squared	-2.30%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **CARGO**

Number of Observations: 83

Equation in Unit Space: Cost = 115.226 * THRUST ^ 0.307

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	4.747	0.715	6.641	0.0000
THRUST	0.307	0.076	4.053	0.0001

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.648	16.90%	15.80%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	6.901	6.901	16.429	0.00
Residuals (Errors) (SSE)	81	34.022	0.42		
Total (SST)	82	40.923			

Pairwise Correlation Matrix

	LN(Cost)	LN(THRUST)
LN(Cost)	1.000	0.603
LN(THRUST)	0.603	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	2579.324		
Standard Error (SE)	1539.747	91.19%	-47.70%
Coefficient of Variation (CV)	59.70%		
Adjusted R-Squared	14.70%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **HELO**

Number of Observations: 68

Equation in Unit Space: Cost = 31.284 * LENGTH ^ 0.769

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	3.443	1.938	1.776	0.0803
LENGTH	0.769	0.455	1.689	0.0959

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.685	4.10%	2.70%	0.10%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	1.338	1.338	2.854	0.09
Residuals (Errors) (SSE)	66	30.944	0.469		
Total (SST)	67	32.282			

Pairwise Correlation Matrix

	LN(Cost)	LN(LENGTH)
LN(Cost)	1.000	0.270
LN(LENGTH)	0.270	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	1024.435		
Standard Error (SE)	692.301	98.32%	-49.58%
Coefficient of Variation (CV)	67.60%		
Adjusted R-Squared	-3.40%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **HELO**

Number of Observations: 68

Equation in Unit Space: Cost = 3.423 * WEIGHT ^ 0.558

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	1.231	1.284	0.958	0.3416
WEIGHT	0.558	0.130	4.278	0.0001

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.619	21.70%	20.50%	0.10%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	7.008	7.008	18.302	0.00
Residuals (Errors) (SSE)	66	25.273	0.383		
Total (SST)	67	32.282			

Pairwise Correlation Matrix

	LN(Cost)	LN(WEIGHT)
LN(Cost)	1.000	0.491
LN(WEIGHT)	0.491	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	1024.435		
Standard Error (SE)	614.480	85.67%	-46.14%
Coefficient of Variation (CV)	60.00%		
Adjusted R-Squared	18.50%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **HELO**

Number of Observations: 68

Equation in Unit Space: Cost = 22.644 * THRUST ^ 0.44

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	3.120	1.276	2.445	0.0172
THRUST	0.440	0.156	2.823	0.0063

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.661	10.80%	9.40%	0.10%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	3.478	3.478	7.968	0.00
Residuals (Errors) (SSE)	66	28.804	0.436		
Total (SST)	67	32.282			

Pairwise Correlation Matrix

	LN(Cost)	LN(THRUST)
LN(Cost)	1.000	0.412
LN(THRUST)	0.412	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	1024.435		
Standard Error (SE)	659.860	93.60%	-48.35%
Coefficient of Variation (CV)	64.40%		
Adjusted R-Squared	6.10%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **OTHER**

Number of Observations: 67

Equation in Unit Space: Cost = 69.581 * LENGTH ^ 0.782

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	4.242	0.827	5.127	0.0000
LENGTH	0.782	0.192	4.068	0.0001

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.635	20.30%	19.10%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	6.681	6.681	16.546	0.00
Residuals (Errors) (SSE)	65	26.244	0.404		
Total (SST)	66	32.925			

Pairwise Correlation Matrix

	LN(Cost)	LN(LENGTH)
LN(Cost)	1.000	0.185
LN(LENGTH)	0.185	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	2392.341		
Standard Error (SE)	1326.808	88.78%	-47.03%
Coefficient of Variation (CV)	55.50%		
Adjusted R-Squared	-15.30%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **OTHER**

Number of Observations: 67

Equation in Unit Space: Cost = 2.113 * WEIGHT ^ 0.618

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	0.748	1.012	0.739	0.4626
WEIGHT	0.618	0.091	6.778	0.0000

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.545	41.40%	40.50%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	13.634	13.634	45.94	0.00
Residuals (Errors) (SSE)	65	19.291	0.297		
Total (SST)	66	32.925			

Pairwise Correlation Matrix

	LN(Cost)	LN(WEIGHT)
LN(Cost)	1.000	0.265
LN(WEIGHT)	0.265	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	2392.341		
Standard Error (SE)	1274.685	72.42%	-42.00%
Coefficient of Variation (CV)	53.30%		
Adjusted R-Squared	-6.40%		

I. Model Form and Equation

Model Form: **Log-Linear Model** **OTHER**

Number of Observations: 67

Equation in Unit Space: Cost = 2.867 * THRUST ^ 0.694

II. Fit Measures (in Log Space)

Coefficient Statistics Summary

Variable	Coefficient	Std Dev of Coefficient	t-statistic (coeff/sd)	Significance
Intercept	1.053	0.866	1.217	0.2280
THRUST	0.694	0.092	7.575	0.0000

Goodness of Fit Statistics

Std Error (SE)	R-Squared	R-Squared (adj)	CV (Coeff of Variation)
0.519	46.90%	46.10%	0.00%

Analysis of Variance

Due to	Degrees of Freedom	Sum of Squares (SS)	Mean Squares (SS/DF)	F-statistic	Sig.
Regression (SSR)	1	15.437	15.437	57.373	0.00
Residuals (Errors) (SSE)	65	17.489	0.269		
Total (SST)	66	32.925			

Pairwise Correlation Matrix

	LN(Cost)	LN(THRUST)
LN(Cost)	1.000	0.544
LN(THRUST)	0.544	1.000

III. Predictive Measures (in Unit Space)

Average Actual Cost	2392.341		
Standard Error (SE)	1059.750	67.99%	-40.47%
Coefficient of Variation (CV)	44.30%		
Adjusted R-Squared	26.50%		

APPENDIX L. DATABASE USED IN MODEL BUILDING

TMS: Type / Model / Series
COST: Average Annual Cost ($FY00K)
COM: Command Type
QTY : Number of Aircraft at Each Command
WS : Wing Span
LNGT: Length
HGT: Height
ENG: Number of Engines on Each Aircraft
THT: Thrust of Each Aircraft
WGT: Weight

TMS	COM	COST	QTY	YEAR	WS	LNGT	HGT	WGT	SPEED	CREW	ENG	THT	TYPE
A-4E	LANFLT	2030.5	5	87	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	PACFLT	2081.0	12	87	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	RESERV	552.5	29	87	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	LANFLT	2091.3	6	88	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	PACFLT	1736.5	15	88	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	RESERV	1173.8	8	88	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	LANFLT	1361.7	13	89	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	PACFLT	1845.1	17	89	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	RESERV	398.6	10	89	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	LANFLT	1045.8	12	90	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	PACFLT	1526.6	17	90	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	LANFLT	1213.3	12	91	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	PACFLT	1570.6	19	91	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	LANFLT	1616.7	10	92	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	PACFLT	1061.9	15	92	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	LANFLT	1184.8	10	93	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4E	LANFLT	969.0	9	94	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	LANFLT	948.1	2	87	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	NET	588.9	4	87	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	PACFLT	1662.4	7	87	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	RESERV	625.7	26	87	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	LANFLT	924.9	4	88	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	PACFLT	1001.7	10	88	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	RESERV	699.6	22	88	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	LANFLT	1420.1	3	89	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	PACFLT	854.9	12	89	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	RESERV	1068.6	14	89	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	LANFLT	4741.1	1	90	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	PACFLT	1121.8	14	90	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	RESERV	1709.3	15	90	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	LANFLT	1872.3	3	91	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	PACFLT	1309.5	14	91	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	RESERV	1799.7	14	91	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	LANFLT	2007.8	5	92	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	PACFLT	1817.4	6	92	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	RESERV	1205.5	12	92	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	LANFLT	1350.9	7	93	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	PACFLT	925.9	7	93	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	RESERV	902.6	15	93	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	LANFLT	635.0	6	94	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4F	PACFLT	590.8	7	94	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	LANFLT	2030.3	19	87	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	PACFLT	1753.5	70	87	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	RESERV	559.0	16	87	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	OTHERCOM	925.5	6	88	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	PACFLT	1980.6	58	88	26.6	40.3	15.0	24500	670	1	1	11220	Tactical

A-4M	RESERV	672.5	34	88	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	OTHERCOM	982.8	6	89	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	PACFLT	983.5	44	89	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	RESERV	484.0	55	89	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	OTHERCOM	896.5	6	90	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	PACFLT	1585.0	10	90	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	RESERV	458.8	66	90	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	OTHERCOM	704.2	2	91	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	RESERV	530.2	62	91	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	PACFLT	822.7	8	92	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	RESERV	524.2	41	92	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	PACFLT	723.3	12	93	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	RESERV	653.8	27	93	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	PACFLT	438.0	11	94	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-4M	RESERV	1490.4	4	94	26.6	40.3	15.0	24500	670	1	1	11220	Tactical
A-7B	RESERV	1872.3	3	87	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7C	OTHERCOM	977.9	2	87	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7C	OTHERCOM	948.4	2	88	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7C	OTHERCOM	524.0	1	89	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	LANFLT	1996.4	126	87	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	OTHERCOM	1169.3	8	87	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	PACFLT	2262.1	89	87	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	RESERV	1714.0	48	87	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	LANFLT	1819.0	81	88	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	OTHERCOM	1252.5	7	88	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	PACFLT	2202.2	94	88	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	RESERV	1721.7	48	88	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	LANFLT	1857.2	48	89	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	OTHERCOM	933.6	5	89	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	PACFLT	1818.9	96	89	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	RESERV	1433.6	42	89	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	LANFLT	1855.8	48	90	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	OTHERCOM	1234.0	6	90	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	PACFLT	1380.8	72	90	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	RESERV	1183.0	24	90	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	LANFLT	1135.4	36	91	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	OTHERCOM	554.8	4	91	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	PACFLT	949.3	44	91	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
A-7E	RESERV	1614.2	6	91	38.9	46.1	16.0	42000	691	1	1	13400	Tactical
AH-1J	PACFLT	1530.1	31	87	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1J	RESERV	404.9	16	87	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1J	OTHERCOM	1134.8	1	88	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1J	PACFLT	1302.5	24	88	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1J	RESERV	120.7	24	88	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1J	PACFLT	753.8	14	89	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1J	RESERV	288.5	24	89	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1J	OTHERCOM	1223.1	1	90	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1J	PACFLT	1674.7	4	90	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1J	RESERV	721.5	10	90	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1J	OTHERCOM	648.3	1	91	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1J	PACFLT	710.2	1	91	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1J	RESERV	532.6	12	91	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1J	PACFLT	1097.1	1	92	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1J	RESERV	438.5	12	92	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1J	RESERV	369.1	28	93	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	OTHERCOM	970.5	8	87	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	PACFLT	1083.5	21	87	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	OTHERCOM	1142.2	1	88	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	PACFLT	1732.9	38	88	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	OTHERCOM	1283.6	2	89	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	PACFLT	1275.5	47	89	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	LANFLT	2371.4	12	90	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	OTHERCOM	1354.1	2	90	44.0	71.0	13.8	10000	207	2	2	3834	Helo

AH-1W	PACFLT	1856.6	49	90	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	LANFLT	2077.4	24	91	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	OTHERCOM	304.6	2	91	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	PACFLT	1628.6	62	91	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	LANFLT	1092.2	24	92	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	PACFLT	1067.5	62	92	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	LANFLT	2250.3	30	93	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	PACFLT	2069.1	76	93	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	LANFLT	1956.1	33	94	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	PACFLT	1904.5	81	94	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	LANFLT	1926.2	37	95	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	PACFLT	1827.6	91	95	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	RESERV	1236.7	11	95	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	LANFLT	1402.8	40	96	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	PACFLT	1529.8	91	96	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	RESERV	611.0	34	96	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	LANFLT	1536.9	36	97	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	PACFLT	1730.0	95	97	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	RESERV	993.2	38	97	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	LANFLT	1591.4	41	98	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	PACFLT	1695.8	108	98	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AH-1W	RESERV	733.5	38	98	44.0	71.0	13.8	10000	207	2	2	3834	Helo
AV-8B	LANFLT	2038.7	60	87	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	OTHERCOM	1220.7	4	87	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	PACFLT	8196.4	6	87	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	LANFLT	2284.4	84	88	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	OTHERCOM	765.5	5	88	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	PACFLT	2573.0	14	88	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	LANFLT	2241.5	95	89	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	OTHERCOM	1220.6	5	89	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	PACFLT	2992.1	25	89	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	LANFLT	2526.4	97	90	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	OTHERCOM	1079.7	6	90	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	PACFLT	2514.8	52	90	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	LANFLT	2279.0	98	91	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	OTHERCOM	540.5	5	91	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	PACFLT	1999.7	72	91	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	LANFLT	1190.6	85	92	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	PACFLT	1114.7	77	92	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	LANFLT	1728.1	89	93	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	PACFLT	1440.1	88	93	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	LANFLT	1552.9	90	94	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	PACFLT	1660.7	88	94	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	LANFLT	1449.9	90	95	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	PACFLT	1960.0	87	95	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	LANFLT	1471.9	79	96	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	PACFLT	1899.4	86	96	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	LANFLT	1671.3	75	97	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	PACFLT	1916.9	81	97	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	LANFLT	1964.9	62	98	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
AV-8B	PACFLT	1231.2	80	98	30.4	49.2	11.7	25000	1000	1	1	22200	Tactical
C-130T	RESERV	3416.2	8	93	132.7	97.9	38.3	155000	375	4	4	14548	Cargo
C-130T	RESERV	3736.0	14	95	132.7	97.9	38.3	155000	375	4	4	14548	Cargo
C-130T	RESERV	3088.6	18	98	132.7	97.9	38.3	155000	375	4	4	14548	Cargo
C-131-H	RESERV	4530.8	2	87	105.4	79.2	28.2	49100	309	4	2	4230	Cargo
C-131-H	RESERV	3625.9	2	88	105.4	79.2	28.2	49100	309	4	2	4230	Cargo
C-131-H	RESERV	3192.4	2	89	105.4	79.2	28.2	49100	309	4	2	4230	Cargo
C-131-H	RESERV	2157.2	2	90	105.4	79.2	28.2	49100	309	4	2	4230	Cargo
C-20D	RESERV	1383.9	1	87	77.1	83.2	24.6	69700	576	5	2	22800	Cargo
C-20D	RESERV	1714.8	2	88	77.1	83.2	24.6	69700	576	5	2	22800	Cargo
C-20D	RESERV	1838.3	2	89	77.1	83.2	24.6	69700	576	5	2	22800	Cargo
C-20D	RESERV	1910.3	2	90	77.1	83.2	24.6	69700	576	5	2	22800	Cargo
C-20D	RESERV	1814.2	2	91	77.1	83.2	24.6	69700	576	5	2	22800	Cargo

C-20D	RESERV	2325.5	2	92	77.1	83.2	24.6	69700	576	5	2	22800	Cargo
C-20D	RESERV	2237.2	2	93	77.1	83.2	24.6	69700	576	5	2	22800	Cargo
C-20D	RESERV	3396.5	2	98	77.1	83.2	24.6	69700	576	5	2	22800	Cargo
C-20G	RESERV	2744.9	2	94	77.1	83.2	24.6	69700	576	5	2	22800	Cargo
C-20G	OTHERCOM	4071.3	1	95	77.1	83.2	24.6	69700	576	5	2	22800	Cargo
C-20G	RESERV	6817.3	2	95	77.1	83.2	24.6	69700	576	5	2	22800	Cargo
C-20G	RESERV	7426.7	2	98	77.1	83.2	24.6	69700	576	5	2	22800	Cargo
C-2A	LANFLT	3152.9	13	87	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	OTHERCOM	2975.8	1	87	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	PACFLT	3390.0	11	87	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	LANFLT	3203.9	14	88	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	OTHERCOM	1539.3	1	88	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	PACFLT	2977.7	14	88	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	LANFLT	2607.4	16	89	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	OTHERCOM	592.0	1	89	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	PACFLT	2607.2	16	89	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	LANFLT	2777.4	17	90	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	OTHERCOM	943.1	1	90	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	PACFLT	2412.2	17	90	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	LANFLT	2979.8	17	91	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	PACFLT	2846.0	17	91	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	LANFLT	2705.5	17	92	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	PACFLT	2279.4	18	92	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	LANFLT	2109.6	16	93	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	PACFLT	2166.2	20	93	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	LANFLT	2187.7	17	94	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	PACFLT	2643.2	18	94	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	LANFLT	2376.8	20	95	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	PACFLT	2592.6	16	95	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	LANFLT	3095.7	20	96	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	PACFLT	3214.5	14	96	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	LANFLT	2508.4	19	97	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	PACFLT	2199.4	16	97	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	LANFLT	2294.1	21	98	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-2A	PACFLT	2543.5	14	98	81.0	57.0	16.0	57500	352	4	2	10458	Cargo
C-9B	OTHERCOM	3408.5	2	87	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	RESERV	3890.3	17	87	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	OTHERCOM	3217.6	2	88	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	RESERV	4069.3	17	88	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	OTHERCOM	3336.1	2	89	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	RESERV	4666.8	17	89	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	OTHERCOM	4430.8	2	90	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	RESERV	4559.3	17	90	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	OTHERCOM	3914.3	2	91	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	RESERV	4596.1	17	91	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	OTHERCOM	6918.2	2	92	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	RESERV	5455.7	17	92	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	OTHERCOM	8253.7	2	93	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	RESERV	5514.6	17	93	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	OTHERCOM	3198.0	2	94	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	RESERV	4559.0	16	94	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	OTHERCOM	2510.0	2	95	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	RESERV	4527.8	15	95	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	LANFLT	6415.3	2	98	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
C-9B	RESERV	4907.1	15	98	93.0	119.0	28.0	110000	576	8	2	29000	Cargo
CH-46D	LANFLT	2837.4	14	87	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	OTHERCOM	1219.8	1	87	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	PACFLT	3085.0	9	87	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	LANFLT	2755.4	14	88	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	PACFLT	3548.2	9	88	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	LANFLT	1892.8	16	89	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	PACFLT	2258.0	11	89	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	LANFLT	1893.7	16	90	51.0	84.4	16.8	23000	166	2	2	3840	Helo

CH-46D	PACFLT	1948.5	11	90	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	LANFLT	2307.6	15	91	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	PACFLT	2621.3	11	91	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	LANFLT	2126.4	16	92	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	PACFLT	2119.8	14	92	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	LANFLT	1483.4	16	93	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	PACFLT	1328.9	14	93	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	LANFLT	1828.1	13	94	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	PACFLT	1590.1	15	94	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	LANFLT	2612.8	14	95	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	PACFLT	2677.8	14	95	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	LANFLT	2601.1	13	96	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	PACFLT	2177.5	15	96	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	LANFLT	2732.5	12	97	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	PACFLT	2281.1	15	97	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	LANFLT	2596.8	13	98	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46D	PACFLT	2494.2	13	98	51.0	84.4	16.8	23000	166	2	2	3840	Helo
CH-46E	LANFLT	1486.0	82	87	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	OTHERCOM	1018.7	10	87	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	PACFLT	1780.2	118	87	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	RESERV	673.5	24	87	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	LANFLT	2123.0	82	88	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	OTHERCOM	1614.8	9	88	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	PACFLT	2627.7	118	88	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	RESERV	535.6	24	88	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	LANFLT	1775.4	82	89	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	OTHERCOM	1038.1	7	89	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	PACFLT	1951.0	118	89	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	RESERV	404.4	24	89	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	LANFLT	2026.4	82	90	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	OTHERCOM	1569.5	6	90	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	PACFLT	2133.6	118	90	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	RESERV	397.5	24	90	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	LANFLT	1993.3	82	91	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	OTHERCOM	1012.6	7	91	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	PACFLT	2153.8	118	91	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	RESERV	494.9	24	91	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	LANFLT	926.5	82	92	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	OTHERCOM	2822.1	6	92	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	PACFLT	973.4	118	92	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	RESERV	455.2	24	92	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	LANFLT	1429.9	94	93	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	PACFLT	1582.2	119	93	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	RESERV	486.0	26	93	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	LANFLT	1278.5	95	94	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	PACFLT	1401.2	111	94	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	RESERV	1899.5	7	94	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	LANFLT	1678.6	102	95	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	PACFLT	1613.7	108	95	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	RESERV	933.6	26	95	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	LANFLT	1687.4	102	96	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	PACFLT	1672.6	107	96	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	RESERV	1071.7	26	96	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	LANFLT	1896.2	100	97	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	PACFLT	1715.5	105	97	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	RESERV	1076.4	26	97	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	LANFLT	1798.1	105	98	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	PACFLT	1762.5	109	98	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-46E	RESERV	731.1	23	98	50.0	83.4	16.8	24300	166	2	2	3984	Helo
CH-53A	LANFLT	2093.1	9	87	72.3	88.3	24.1	42000	196	3	2	7316	Helo
CH-53A	PACFLT	1950.5	43	87	72.3	88.3	24.1	42000	196	3	2	7316	Helo
CH-53A	RESERV	943.7	18	87	72.3	88.3	24.1	42000	196	3	2	7316	Helo
CH-53A	LANFLT	1837.6	9	88	72.3	88.3	24.1	42000	196	3	2	7316	Helo

CH-53A	OTHERCOM	744.7	1	88	72.3	88.3	24.1	42000	196	3	2	7316	Helo
CH-53A	PACFLT	2326.2	36	88	72.3	88.3	24.1	42000	196	3	2	7316	Helo
CH-53A	RESERV	945.3	18	88	72.3	88.3	24.1	42000	196	3	2	7316	Helo
CH-53A	OTHERCOM	592.5	1	89	72.3	88.3	24.1	42000	196	3	2	7316	Helo
CH-53A	PACFLT	1649.9	28	89	72.3	88.3	24.1	42000	196	3	2	7316	Helo
CH-53A	RESERV	902.9	18	89	72.3	88.3	24.1	42000	196	3	2	7316	Helo
CH-53A	OTHERCOM	1150.3	1	90	72.3	88.3	24.1	42000	196	3	2	7316	Helo
CH-53A	PACFLT	1745.4	28	90	72.3	88.3	24.1	42000	196	3	2	7316	Helo
CH-53A	RESERV	597.5	18	90	72.3	88.3	24.1	42000	196	3	2	7316	Helo
CH-53A	OTHERCOM	86.5	1	91	72.3	88.3	24.1	42000	196	3	2	7316	Helo
CH-53A	PACFLT	1674.0	7	91	72.3	88.3	24.1	42000	196	3	2	7316	Helo
CH-53A	PACFLT	536.4	12	92	72.3	88.3	24.1	42000	196	3	2	7316	Helo
CH-53E	LANFLT	2681.3	26	87	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	OTHERCOM	1113.4	4	87	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	PACFLT	1646.0	47	87	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	LANFLT	3656.2	34	88	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	OTHERCOM	1568.0	2	88	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	PACFLT	2155.0	47	88	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	LANFLT	2420.3	42	89	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	OTHERCOM	1063.0	3	89	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	PACFLT	1769.3	47	89	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	LANFLT	3023.1	42	90	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	OTHERCOM	857.9	4	90	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	PACFLT	1645.1	47	90	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	LANFLT	3411.4	38	91	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	OTHERCOM	846.2	3	91	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	PACFLT	1872.7	52	91	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	LANFLT	1788.2	42	92	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	OTHERCOM	2693.3	2	92	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	PACFLT	1056.7	67	92	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	LANFLT	2112.8	52	93	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	PACFLT	1650.9	73	93	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	LANFLT	2521.6	52	94	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	PACFLT	1924.9	79	94	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	LANFLT	2346.6	51	95	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	PACFLT	1656.5	92	95	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	LANFLT	2358.1	43	96	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	PACFLT	1732.4	89	96	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	LANFLT	1968.4	63	97	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	PACFLT	2127.0	74	97	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	LANFLT	2251.2	57	98	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	PACFLT	2296.1	69	98	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CH-53E	RESERV	817.4	15	98	79.0	99.0	29.5	73500	196	3	3	11811	Helo
CT-39E	LANFLT	2276.3	2	87	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39E	PACFLT	3275.4	4	87	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39E	LANFLT	3879.6	2	88	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39E	PACFLT	3190.6	4	88	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39E	LANFLT	3693.9	2	89	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39E	PACFLT	2558.1	4	89	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39E	LANFLT	2750.8	2	90	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39E	PACFLT	2255.0	4	90	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39E	PACFLT	3713.7	4	91	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39E	PACFLT	2413.3	2	92	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39E	RESERV	2154.0	1	94	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	LANFLT	3039.8	3	87	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	OTHERCOM	1687.5	5	87	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	RESERV	1217.9	4	87	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	LANFLT	2798.0	3	88	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	OTHERCOM	1763.0	5	88	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	RESERV	1200.5	4	88	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	LANFLT	2895.8	3	89	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	OTHERCOM	1114.0	5	89	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	RESERV	1143.7	4	89	44.5	43.9	16.0	18650	563	2	2	6600	Cargo

CT-39G	LANFLT	3729.7	3	90	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	OTHERCOM	3092.4	5	90	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	RESERV	1799.7	4	90	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	LANFLT	2575.5	3	91	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	OTHERCOM	1506.6	4	91	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	RESERV	1287.7	4	91	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	LANFLT	3414.5	3	92	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	OTHERCOM	2595.4	2	92	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	RESERV	1485.8	4	92	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	LANFLT	5823.8	3	93	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	OTHERCOM	1698.2	4	93	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	RESERV	1292.9	6	93	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	OTHERCOM	1837.8	5	94	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	OTHERCOM	1973.8	3	95	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	RESERV	2782.8	1	95	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	PACFLT	1477.9	2	96	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	RESERV	1370.1	6	96	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	PACFLT	3604.8	2	97	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	RESERV	1424.0	1	97	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	PACFLT	6539.3	2	98	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
CT-39G	RESERV	1156.4	1	98	44.5	43.9	16.0	18650	563	2	2	6600	Cargo
DC-9B	RESERV	4510.2	10	87	93.5	119.3	27.6	121000	575	8	2	29000	Cargo
DC-9B	RESERV	4758.1	10	88	93.5	119.3	27.6	121000	575	8	2	29000	Cargo
DC-9B	RESERV	4132.0	10	89	93.5	119.3	27.6	121000	575	8	2	29000	Cargo
DC-9B	RESERV	4580.8	10	90	93.5	119.3	27.6	121000	575	8	2	29000	Cargo
DC-9B	RESERV	4420.1	10	91	93.5	119.3	27.6	121000	575	8	2	29000	Cargo
DC-9B	RESERV	5549.8	10	92	93.5	119.3	27.6	121000	575	8	2	29000	Cargo
DC-9B	RESERV	5417.0	10	93	93.5	119.3	27.6	121000	575	8	2	29000	Cargo
DC-9B	RESERV	4678.1	11	94	93.5	119.3	27.6	121000	575	8	2	29000	Cargo
DC-9B	RESERV	4505.2	12	95	93.5	119.3	27.6	121000	575	8	2	29000	Cargo
DC-9B	RESERV	4338.8	12	98	93.5	119.3	27.6	121000	575	8	2	29000	Cargo
E-2C	LANFLT	4564.2	34	87	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	OTHERCOM	2530.8	3	87	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	PACFLT	4715.5	32	87	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	RESERV	3009.2	7	87	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	LANFLT	4756.4	35	88	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	OTHERCOM	2051.0	3	88	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	PACFLT	4809.5	31	88	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	RESERV	2665.9	8	88	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	LANFLT	4495.3	36	89	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	OTHERCOM	2113.0	4	89	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	PACFLT	4715.0	31	89	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	RESERV	2544.4	8	89	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	LANFLT	4822.5	37	90	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	OTHERCOM	2249.7	4	90	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	PACFLT	4644.7	32	90	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	RESERV	3153.1	8	90	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	LANFLT	5444.4	36	91	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	OTHERCOM	2123.7	3	91	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	PACFLT	5271.0	33	91	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	RESERV	3367.7	8	91	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	LANFLT	4939.5	35	92	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	PACFLT	4660.2	36	92	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	RESERV	4204.5	8	92	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	LANFLT	3381.0	45	93	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	PACFLT	3312.3	45	93	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	RESERV	2058.4	11	93	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	LANFLT	3906.0	43	94	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	PACFLT	3683.7	41	94	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	RESERV	1878.0	10	94	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	LANFLT	4912.3	47	95	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	PACFLT	5033.3	28	95	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	RESERV	3584.7	5	95	81.0	58.0	18.0	51569	375	5	2	10458	Other

E-2C	LANFLT	4324.6	49	96	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	PACFLT	5574.1	21	96	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	RESERV	3524.2	6	96	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	LANFLT	3793.7	41	97	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	PACFLT	4630.8	22	97	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	RESERV	2850.5	11	97	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	LANFLT	5051.4	36	98	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	PACFLT	5526.3	22	98	81.0	58.0	18.0	51569	375	5	2	10458	Other
E-2C	RESERV	2718.9	10	98	81.0	58.0	18.0	51569	375	5	2	10458	Other
EA-3B	LANFLT	4808.4	6	87	72.0	75.7	22.8	73000	630	3	2	26000	Other
EA-3B	PACFLT	4822.1	7	87	72.0	75.7	22.8	73000	630	3	2	26000	Other
EA-3B	LANFLT	4542.7	6	88	72.0	75.7	22.8	73000	630	3	2	26000	Other
EA-3B	PACFLT	3702.8	7	88	72.0	75.7	22.8	73000	630	3	2	26000	Other
EA-3B	LANFLT	4073.1	6	89	72.0	75.7	22.8	73000	630	3	2	26000	Other
EA-3B	PACFLT	2380.3	7	89	72.0	75.7	22.8	73000	630	3	2	26000	Other
EA-3B	LANFLT	3571.4	6	90	72.0	75.7	22.8	73000	630	3	2	26000	Other
EA-3B	PACFLT	910.8	7	90	72.0	75.7	22.8	73000	630	3	2	26000	Other
EA-3B	LANFLT	4014.9	5	91	72.0	75.7	22.8	73000	630	3	2	26000	Other
EA-4F	LANFLT	2651.4	2	87	27.6	42.7	15.3	25500	670	2	1	11200	Other
EA-4F	LANFLT	2161.4	1	88	27.6	42.7	15.3	25500	670	2	1	11200	Other
EA-4F	LANFLT	1661.1	2	89	27.6	42.7	15.3	25500	670	2	1	11200	Other
EA-4F	LANFLT	1536.0	2	90	27.6	42.7	15.3	25500	670	2	1	11200	Other
EA-6A	LANFLT	5647.1	4	87	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6A	RESERV	3725.4	12	87	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6A	LANFLT	4299.4	4	88	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6A	RESERV	2498.5	12	88	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6A	LANFLT	3109.4	4	89	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6A	RESERV	2063.3	10	89	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6A	LANFLT	2928.7	4	90	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6A	RESERV	1195.9	8	90	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6A	LANFLT	3411.3	8	91	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6A	RESERV	1905.9	2	91	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6A	LANFLT	3664.3	8	92	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6A	LANFLT	3736.9	7	93	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	LANFLT	7128.3	15	87	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	OTHERCOM	3573.0	1	87	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	PACFLT	6798.4	63	87	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	LANFLT	6265.7	17	88	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	OTHERCOM	2163.5	1	88	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	PACFLT	4944.0	67	88	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	LANFLT	5144.6	17	89	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	OTHERCOM	1855.1	3	89	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	PACFLT	4758.8	70	89	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	RESERV	1999.4	2	89	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	LANFLT	5547.4	18	90	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	OTHERCOM	1390.9	3	90	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	PACFLT	3787.9	74	90	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	RESERV	3131.2	4	90	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	LANFLT	3654.3	18	91	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	OTHERCOM	1438.6	3	91	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	PACFLT	4412.8	74	91	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	RESERV	2974.9	8	91	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	LANFLT	2932.0	18	92	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	PACFLT	4411.8	83	92	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	RESERV	3638.9	9	92	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	LANFLT	5349.7	23	93	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	PACFLT	4689.6	90	93	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	RESERV	4353.7	8	93	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	LANFLT	4315.9	26	94	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	PACFLT	4660.1	73	94	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	RESERV	3674.0	8	94	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	LANFLT	3915.3	26	95	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	PACFLT	4281.3	79	95	53.0	60.0	16.0	61500	651	4	2	22400	Other

EA-6B	RESERV	5621.5	3	95	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	LANFLT	3103.7	27	96	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	PACFLT	4078.8	74	96	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	RESERV	3473.1	5	96	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	LANFLT	3542.7	22	97	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	PACFLT	4855.0	68	97	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	RESERV	4141.7	4	97	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	LANFLT	5828.2	18	98	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	PACFLT	6186.7	77	98	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-6B	RESERV	5892.0	4	98	53.0	60.0	16.0	61500	651	4	2	22400	Other
EA-7L	PACFLT	2212.1	6	87	39.4	26.9	6.6	2725	138	2	1	220	Other
EA-7L	PACFLT	1916.7	6	88	39.4	26.9	6.6	2725	138	2	1	220	Other
EA-7L	PACFLT	1583.9	6	89	39.4	26.9	6.6	2725	138	2	1	220	Other
EA-7L	PACFLT	1643.6	6	90	39.4	26.9	6.6	2725	138	2	1	220	Other
EA-7L	PACFLT	1556.1	6	91	39.4	26.9	6.6	2725	138	2	1	220	Other
EC-130G	LANFLT	11394.6	1	87	132.7	100.6	38.6	155000	374	11	4	16612	Other
EC-130G	OTHERCOM	4309.7	1	87	132.7	100.6	38.6	155000	374	11	4	16612	Other
EC-130G	PACFLT	5902.8	1	88	132.7	100.6	38.6	155000	374	11	4	16612	Other
EC-130G	PACFLT	4578.8	1	89	132.7	100.6	38.6	155000	374	11	4	16612	Other
EC-130Q	LANFLT	4354.2	7	87	132.7	100.6	38.6	155000	374	11	4	16612	Other
EC-130Q	PACFLT	4584.6	7	87	132.7	100.6	38.6	155000	374	11	4	16612	Other
EC-130Q	LANFLT	4087.5	7	88	132.7	100.6	38.6	155000	374	11	4	16612	Other
EC-130Q	PACFLT	4076.5	7	88	132.7	100.6	38.6	155000	374	11	4	16612	Other
EC-130Q	LANFLT	4093.3	7	89	132.7	100.6	38.6	155000	374	11	4	16612	Other
EC-130Q	PACFLT	5761.9	5	89	132.7	100.6	38.6	155000	374	11	4	16612	Other
EC-130Q	LANFLT	8309.1	6	90	132.7	100.6	38.6	155000	374	11	4	16612	Other
EC-130Q	PACFLT	11647.2	1	90	132.7	100.6	38.6	155000	374	11	4	16612	Other
EC-130Q	LANFLT	10769.0	2	91	132.7	100.6	38.6	155000	374	11	4	16612	Other
EC-130Q	LANFLT	8591.7	2	92	132.7	100.6	38.6	155000	374	11	4	16612	Other
EP-3A	OTHERCOM	2443.2	5	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3A	OTHERCOM	2078.8	5	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3A	LANFLT	3063.7	1	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3A	OTHERCOM	2007.5	5	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3A	LANFLT	2211.0	1	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3A	OTHERCOM	1930.2	5	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3A	LANFLT	1757.6	1	91	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3B	OTHERCOM	1105.8	1	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3B	PACFLT	8876.2	1	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3B	OTHERCOM	2608.6	1	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3B	OTHERCOM	908.9	1	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3B	OTHERCOM	879.8	1	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	LANFLT	10303.1	6	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	PACFLT	11268.0	6	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	LANFLT	9443.5	6	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	PACFLT	10269.2	6	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	LANFLT	7196.5	6	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	PACFLT	8555.3	6	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	LANFLT	5750.4	6	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	PACFLT	7173.1	6	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	LANFLT	7866.3	6	91	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	PACFLT	8373.5	6	91	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	LANFLT	10673.8	6	92	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	PACFLT	9504.9	6	92	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	LANFLT	9995.7	5	93	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	PACFLT	10846.9	5	93	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	LANFLT	10891.8	4	94	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	PACFLT	10592.4	4	94	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	LANFLT	10855.1	4	95	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	PACFLT	11227.4	4	95	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	LANFLT	8882.8	6	96	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	PACFLT	8919.5	4	96	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	LANFLT	9831.4	5	97	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	PACFLT	8862.1	5	97	100.0	117.0	34.0	135000	473	10	4	15560	Other

EP-3E	LANFLT	9635.7	5	98	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3E	PACFLT	7970.6	6	98	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3J	LANFLT	3140.3	2	93	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3J	RESERV	2548.5	2	94	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3J	RESERV	2939.9	2	95	100.0	117.0	34.0	135000	473	10	4	15560	Other
EP-3J	RESERV	5422.3	2	98	100.0	117.0	34.0	135000	473	10	4	15560	Other
ERA-3B	LANFLT	4665.4	4	87	72.0	75.7	22.8	73000	630	3	2	26000	Other
ERA-3B	PACFLT	3026.3	4	87	72.0	75.7	22.8	73000	630	3	2	26000	Other
ERA-3B	LANFLT	3132.7	4	88	72.0	75.7	22.8	73000	630	3	2	26000	Other
ERA-3B	PACFLT	1979.7	5	88	72.0	75.7	22.8	73000	630	3	2	26000	Other
ERA-3B	LANFLT	2559.1	4	89	72.0	75.7	22.8	73000	630	3	2	26000	Other
ERA-3B	PACFLT	1820.6	4	89	72.0	75.7	22.8	73000	630	3	2	26000	Other
ERA-3B	LANFLT	2387.3	4	90	72.0	75.7	22.8	73000	630	3	2	26000	Other
ERA-3B	PACFLT	1409.0	4	90	72.0	75.7	22.8	73000	630	3	2	26000	Other
ERA-3B	LANFLT	2864.2	3	91	72.0	75.7	22.8	73000	630	3	2	26000	Other
ERA-3B	PACFLT	958.8	4	91	72.0	75.7	22.8	73000	630	3	2	26000	Other
ERA-3B	LANFLT	2902.1	2	92	72.0	75.7	22.8	73000	630	3	2	26000	Other
ES-3A	OTHERCOM	10211.9	1	91	68.8	53.4	22.9	52500	518	4	2	18550	Other
ES-3A	LANFLT	9663.1	5	93	68.8	53.4	22.9	52500	518	4	2	18550	Other
ES-3A	PACFLT	9801.4	6	93	68.8	53.4	22.9	52500	518	4	2	18550	Other
ES-3A	LANFLT	5480.6	8	94	68.8	53.4	22.9	52500	518	4	2	18550	Other
ES-3A	PACFLT	5673.0	8	94	68.8	53.4	22.9	52500	518	4	2	18550	Other
ES-3A	LANFLT	5531.6	8	95	68.8	53.4	22.9	52500	518	4	2	18550	Other
ES-3A	PACFLT	5603.4	8	95	68.8	53.4	22.9	52500	518	4	2	18550	Other
ES-3A	LANFLT	5338.9	8	96	68.8	53.4	22.9	52500	518	4	2	18550	Other
ES-3A	PACFLT	4626.0	8	96	68.8	53.4	22.9	52500	518	4	2	18550	Other
ES-3A	LANFLT	5254.9	8	97	68.8	53.4	22.9	52500	518	4	2	18550	Other
ES-3A	PACFLT	5037.4	8	97	68.8	53.4	22.9	52500	518	4	2	18550	Other
ES-3A	LANFLT	7187.0	8	98	68.8	53.4	22.9	52500	518	4	2	18550	Other
ES-3A	PACFLT	6883.3	6	98	68.8	53.4	22.9	52500	518	4	2	18550	Other
F/A-18A	LANFLT	2948.2	128	87	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	NET	4625.8	11	87	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	OTHERCOM	2226.6	4	87	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	PACFLT	2878.7	140	87	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	RESERV	1812.8	14	87	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	LANFLT	3208.9	156	88	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	NET	1710.6	15	88	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	OTHERCOM	1586.8	8	88	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	PACFLT	3087.1	133	88	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	RESERV	1628.7	21	88	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	LANFLT	2711.0	141	89	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	NET	1308.1	17	89	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	OTHERCOM	1207.1	8	89	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	PACFLT	2530.3	125	89	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	RESERV	1142.7	27	89	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	LANFLT	2806.6	148	90	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	NET	1760.5	16	90	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	OTHERCOM	1146.2	8	90	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	PACFLT	2562.7	97	90	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	RESERV	1280.2	39	90	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	LANFLT	2724.3	120	91	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	NET	1723.5	11	91	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	OTHERCOM	1489.1	8	91	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	PACFLT	2439.8	88	91	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	RESERV	1080.5	54	91	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	LANFLT	1853.1	106	92	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	NET	2195.8	8	92	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	PACFLT	1716.9	99	92	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	RESERV	1345.9	72	92	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	LANFLT	2088.3	73	93	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	NET	1801.8	10	93	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	PACFLT	1698.9	102	93	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	RESERV	1116.2	101	93	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical

F/A-18A	LANFLT	2194.9	70	94	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	NET	1248.4	10	94	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	PACFLT	1868.3	76	94	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	RESERV	2128.3	64	94	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	LANFLT	2267.1	70	95	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	NET	1910.7	10	95	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	PACFLT	2099.2	79	95	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	RESERV	1612.7	89	95	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	LANFLT	3105.5	57	96	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	NET	2276.9	9	96	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	PACFLT	2473.5	68	96	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	RESERV	1215.8	112	96	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	LANFLT	2698.8	39	97	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	NET	2056.8	9	97	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	PACFLT	2309.7	55	97	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	RESERV	1536.1	88	97	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	LANFLT	3761.6	33	98	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	NET	2154.4	10	98	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	PACFLT	2287.9	49	98	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18A	RESERV	1664.3	84	98	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18B	LANFLT	2040.3	17	87	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	NET	1209.2	4	87	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	OTHERCOM	1353.1	1	87	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	PACFLT	2210.9	15	87	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	LANFLT	2201.0	12	88	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	NET	1408.5	6	88	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	OTHERCOM	1314.1	2	88	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	PACFLT	2629.8	20	88	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	LANFLT	1735.6	4	89	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	NET	1027.0	5	89	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	OTHERCOM	688.5	2	89	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	PACFLT	2387.2	22	89	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	LANFLT	3254.5	3	90	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	NET	1623.5	5	90	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	OTHERCOM	859.0	2	90	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	PACFLT	2725.4	18	90	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	LANFLT	2180.3	5	91	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	NET	1379.8	4	91	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	OTHERCOM	892.2	2	91	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	PACFLT	2362.9	14	91	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	LANFLT	3158.2	2	92	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	NET	1302.0	2	92	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	PACFLT	2195.1	12	92	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	LANFLT	1930.0	4	93	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	NET	4557.3	2	93	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	PACFLT	1798.2	18	93	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	LANFLT	2030.1	4	94	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	PACFLT	1707.8	12	94	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	LANFLT	2697.0	4	95	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	PACFLT	1793.4	14	95	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	LANFLT	2001.1	4	96	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	NET	1906.2	2	96	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	PACFLT	2003.5	13	96	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	LANFLT	1768.2	4	97	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	NET	1873.2	2	97	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	PACFLT	2071.3	12	97	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	LANFLT	1866.4	4	98	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	NET	2130.4	2	98	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	PACFLT	2018.5	12	98	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18B	RESERV	2151.5	2	98	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18C	LANFLT	2079.6	28	88	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	OTHERCOM	1969.5	2	88	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	PACFLT	1742.2	4	88	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical

F/A-18C	LANFLT	1814.6	63	89	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	OTHERCOM	1425.7	4	89	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	PACFLT	2799.5	28	89	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	LANFLT	2147.1	53	90	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	OTHERCOM	1266.3	5	90	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	PACFLT	2851.4	95	90	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	LANFLT	2544.5	74	91	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	OTHERCOM	879.6	7	91	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	PACFLT	2845.2	116	91	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	LANFLT	2143.3	119	92	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	PACFLT	1980.5	133	92	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	LANFLT	2379.8	128	93	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	PACFLT	2169.7	175	93	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	LANFLT	2483.3	137	94	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	PACFLT	2164.9	193	94	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	LANFLT	2798.7	145	95	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	PACFLT	2392.9	208	95	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	LANFLT	2675.8	162	96	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	PACFLT	2381.1	215	96	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	LANFLT	2623.7	169	97	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	PACFLT	2492.2	218	97	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	LANFLT	2590.0	173	98	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18C	PACFLT	2564.7	226	98	37.5	56.0	15.3	56000	1294	1	2	36000	Tactical
F/A-18D	LANFLT	2233.7	7	88	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	OTHERCOM	274.1	1	88	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	PACFLT	1159.5	4	88	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	LANFLT	2052.1	14	89	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	OTHERCOM	1873.0	2	89	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	PACFLT	2390.7	11	89	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	LANFLT	2235.1	13	90	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	OTHERCOM	1132.8	3	90	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	PACFLT	3102.2	23	90	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	LANFLT	2894.4	13	91	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	OTHERCOM	471.8	2	91	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	PACFLT	2954.8	43	91	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	LANFLT	2102.3	17	92	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	PACFLT	1569.1	62	92	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	LANFLT	2168.7	26	93	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	PACFLT	2245.7	79	93	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	LANFLT	3021.5	39	94	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	PACFLT	2198.4	76	94	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	LANFLT	2724.4	50	95	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	PACFLT	2320.9	76	95	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	LANFLT	2412.0	50	96	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	PACFLT	2159.4	75	96	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	LANFLT	2338.2	48	97	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	PACFLT	2305.7	74	97	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	LANFLT	2233.4	48	98	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F/A-18D	PACFLT	2203.7	76	98	37.5	56.0	15.3	56000	1294	2	2	36000	Tactical
F-14A	LANFLT	4079.8	179	87	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	OTHERCOM	2135.6	13	87	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	PACFLT	4064.3	170	87	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	RESERV	3376.6	30	87	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	LANFLT	3155.1	177	88	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	OTHERCOM	2007.0	12	88	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	PACFLT	3259.8	166	88	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	RESERV	2775.8	42	88	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	LANFLT	2802.0	175	89	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	OTHERCOM	1764.4	17	89	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	PACFLT	2840.0	162	89	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	RESERV	2130.5	48	89	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	LANFLT	2877.9	173	90	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	OTHERCOM	1436.2	18	90	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical

F-14A	PACFLT	2823.9	156	90	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	RESERV	1828.0	48	90	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	LANFLT	2759.4	166	91	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	OTHERCOM	1525.5	9	91	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	PACFLT	2437.9	149	91	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	RESERV	1694.5	48	91	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	LANFLT	2549.9	118	92	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	PACFLT	2805.4	124	92	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	RESERV	2183.8	48	92	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	LANFLT	3106.6	87	93	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	PACFLT	2871.4	134	93	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	RESERV	1977.1	42	93	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	LANFLT	3029.6	92	94	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	PACFLT	2973.0	114	94	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	RESERV	2000.5	41	94	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	LANFLT	3320.0	103	95	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	PACFLT	3623.3	84	95	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	RESERV	2907.1	17	95	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	LANFLT	2612.8	98	96	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	PACFLT	3049.8	64	96	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	RESERV	2588.1	15	96	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	LANFLT	3244.8	89	97	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	PACFLT	2383.7	37	97	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	RESERV	2750.8	12	97	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	LANFLT	4182.8	68	98	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	PACFLT	3592.7	26	98	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14A	RESERV	3537.2	12	98	38.2	62.8	16.0	72000	1544	3	2	41800	Tactical
F-14B	LANFLT	2336.4	58	92	38.2	62.8	16.0	74349	1544	2	2	54000	Tactical
F-14B	PACFLT	3926.8	11	92	38.2	62.8	16.0	74349	1544	2	2	54000	Tactical
F-14B	LANFLT	2470.1	59	93	38.2	62.8	16.0	74349	1544	2	2	54000	Tactical
F-14B	PACFLT	1710.4	5	93	38.2	62.8	16.0	74349	1544	2	2	54000	Tactical
F-14B	LANFLT	2723.6	62	94	38.2	62.8	16.0	74349	1544	2	2	54000	Tactical
F-14B	PACFLT	2639.4	1	94	38.2	62.8	16.0	74349	1544	2	2	54000	Tactical
F-14B	LANFLT	2908.1	67	95	38.2	62.8	16.0	74349	1544	2	2	54000	Tactical
F-14B	PACFLT	4189.4	1	95	38.2	62.8	16.0	74349	1544	2	2	54000	Tactical
F-14B	LANFLT	2702.7	68	96	38.2	62.8	16.0	74349	1544	2	2	54000	Tactical
F-14B	PACFLT	1905.7	4	96	38.2	62.8	16.0	74349	1544	2	2	54000	Tactical
F-14B	LANFLT	2519.6	68	97	38.2	62.8	16.0	74349	1544	2	2	54000	Tactical
F-14B	PACFLT	2119.8	3	97	38.2	62.8	16.0	74349	1544	2	2	54000	Tactical
F-14B	LANFLT	4468.1	71	98	38.2	62.8	16.0	74349	1544	2	2	54000	Tactical
F-14B	PACFLT	3853.6	1	98	38.2	62.8	16.0	74349	1544	2	2	54000	Tactical
F-14D	OTHERCOM	763.7	2	90	38.2	64.1	16.0	74349	1544	2	2	54000	Tactical
F-14D	OTHERCOM	524.1	2	91	38.2	64.1	16.0	74349	1544	2	2	54000	Tactical
F-14D	PACFLT	2930.4	5	91	38.2	64.1	16.0	74349	1544	2	2	54000	Tactical
F-14D	PACFLT	1920.6	27	92	38.2	64.1	16.0	74349	1544	2	2	54000	Tactical
F-14D	PACFLT	2146.3	45	93	38.2	64.1	16.0	74349	1544	2	2	54000	Tactical
F-14D	PACFLT	2911.1	49	94	38.2	64.1	16.0	74349	1544	2	2	54000	Tactical
F-14D	LANFLT	2502.1	8	95	38.2	64.1	16.0	74349	1544	2	2	54000	Tactical
F-14D	PACFLT	2995.8	41	95	38.2	64.1	16.0	74349	1544	2	2	54000	Tactical
F-14D	LANFLT	2579.7	8	96	38.2	64.1	16.0	74349	1544	2	2	54000	Tactical
F-14D	PACFLT	3712.9	29	96	38.2	64.1	16.0	74349	1544	2	2	54000	Tactical
F-14D	LANFLT	2596.8	39	97	38.2	64.1	16.0	74349	1544	2	2	54000	Tactical
F-14D	PACFLT	1938.9	6	97	38.2	64.1	16.0	74349	1544	2	2	54000	Tactical
F-14D	LANFLT	3389.4	41	98	38.2	64.1	16.0	74349	1544	2	2	54000	Tactical
F-14D	PACFLT	3836.8	2	98	38.2	64.1	16.0	74349	1544	2	2	54000	Tactical
F-16N	PACFLT	628.9	7	87	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-16N	LANFLT	2542.1	5	88	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-16N	PACFLT	1947.0	13	88	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-16N	LANFLT	1860.7	10	89	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-16N	PACFLT	1643.5	12	89	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-16N	LANFLT	1708.3	10	90	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-16N	PACFLT	1685.7	12	90	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-16N	LANFLT	1175.8	10	91	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical

F-16N	PACFLT	996.6	12	91	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-16N	LANFLT	1374.0	10	92	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-16N	PACFLT	1703.4	6	92	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-16N	LANFLT	1223.9	10	93	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-16N	PACFLT	1036.6	12	93	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-16N	LANFLT	927.7	10	94	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-16N	PACFLT	1072.0	11	94	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-16N	LANFLT	485.2	4	95	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-16N	PACFLT	451.1	13	95	32.8	49.5	16.8	42300	1500	1	1	25000	Tactical
F-21A	LANFLT	2034.4	12	87	27.0	53.8	13.8	30203	1750	1	1	17900	Tactical
F-21A	RESERV	3487.7	9	87	27.0	53.8	13.8	30203	1750	1	1	17900	Tactical
F-21A	LANFLT	1328.2	12	88	27.0	53.8	13.8	30203	1750	1	1	17900	Tactical
F-21A	RESERV	3918.0	13	88	27.0	53.8	13.8	30203	1750	1	1	17900	Tactical
F-21A	RESERV	3091.5	13	89	27.0	53.8	13.8	30203	1750	1	1	17900	Tactical
F-4J	OTHERCOM	1668.0	3	87	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4J	OTHERCOM	1195.9	3	88	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4J	OTHERCOM	1115.8	2	89	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4J	OTHERCOM	679.2	1	90	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4S	LANFLT	2310.5	24	87	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4S	OTHERCOM	1763.1	3	87	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4S	PACFLT	3043.7	58	87	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4S	RESERV	1036.9	45	87	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4S	OTHERCOM	1390.1	4	88	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4S	PACFLT	3515.9	38	88	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4S	RESERV	728.7	36	88	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4S	OTHERCOM	1728.5	2	89	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4S	PACFLT	1987.5	20	89	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4S	RESERV	1027.8	30	89	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4S	OTHERCOM	1323.8	2	90	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4S	PACFLT	1434.3	1	90	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4S	RESERV	1143.2	24	90	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4S	RESERV	912.2	24	91	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-4S	RESERV	147.8	18	92	38.1	62.1	16.5	62000	1600	2	2	35800	Tactical
F-5E	PACFLT	1602.3	8	87	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	PACFLT	548.9	8	88	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	PACFLT	1273.0	8	89	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	RESERV	1777.2	1	89	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	LANFLT	1365.7	9	90	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	PACFLT	948.8	15	90	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	RESERV	1488.8	13	90	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	LANFLT	1138.2	9	91	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	PACFLT	1451.0	15	91	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	RESERV	957.6	13	91	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	LANFLT	1327.2	9	92	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	PACFLT	1295.2	14	92	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	RESERV	1055.3	12	92	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	LANFLT	1535.1	8	93	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	PACFLT	1699.4	15	93	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	RESERV	968.5	13	93	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	LANFLT	975.8	8	94	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	PACFLT	1470.1	14	94	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	RESERV	768.8	12	94	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	LANFLT	1289.5	7	95	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	PACFLT	1116.3	13	95	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	RESERV	754.9	13	95	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	LANFLT	809.6	4	96	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	PACFLT	1559.6	4	96	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	RESERV	651.0	26	96	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5E	RESERV	706.1	30	98	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	PACFLT	1151.8	3	87	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	PACFLT	808.0	3	88	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	PACFLT	1111.2	3	89	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	LANFLT	1887.8	2	90	26.8	48.2	13.4	20677	925	1	2	10000	Tactical

F-5F	PACFLT	1248.2	1	90	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	LANFLT	1370.5	2	91	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	PACFLT	1642.3	1	91	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	LANFLT	1412.2	2	92	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	PACFLT	1238.7	1	92	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	LANFLT	1551.4	2	93	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	PACFLT	1733.6	1	93	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	LANFLT	965.1	2	94	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	PACFLT	1475.9	1	94	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	RESERV	767.0	1	94	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	LANFLT	954.7	2	95	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	PACFLT	1150.4	1	95	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	LANFLT	754.8	1	96	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	PACFLT	929.7	1	96	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
F-5F	RESERV	690.0	4	98	26.8	48.2	13.4	20677	925	1	2	10000	Tactical
HH-1K	RESERV	822.1	14	87	44.0	53.0	12.7	9500	144	2	1	1173	Helo
HH-1K	RESERV	680.5	14	88	44.0	53.0	12.7	9500	144	2	1	1173	Helo
HH-1K	RESERV	811.5	13	89	44.0	53.0	12.7	9500	144	2	1	1173	Helo
HH-1K	OTHERCOM	523.8	2	90	44.0	53.0	12.7	9500	144	2	1	1173	Helo
HH-1K	OTHERCOM	374.3	2	91	44.0	53.0	12.7	9500	144	2	1	1173	Helo
HH-1N	LANFLT	1011.2	15	92	48.2	57.3	14.1	11200	115	1	1	2110	Helo
HH-1N	LANFLT	1608.8	18	93	48.2	57.3	14.1	11200	115	1	1	2110	Helo
HH-1N	PACFLT	3025.6	6	93	48.2	57.3	14.1	11200	115	1	1	2110	Helo
HH-1N	LANFLT	637.7	6	94	48.2	57.3	14.1	11200	115	1	1	2110	Helo
HH-1N	PACFLT	1532.4	10	94	48.2	57.3	14.1	11200	115	1	1	2110	Helo
HH-1N	LANFLT	566.1	5	95	48.2	57.3	14.1	11200	115	1	1	2110	Helo
HH-1N	OTHERCOM	1100.9	6	95	48.2	57.3	14.1	11200	115	1	1	2110	Helo
HH-1N	PACFLT	1333.5	10	95	48.2	57.3	14.1	11200	115	1	1	2110	Helo
HH-1N	LANFLT	646.3	2	96	48.2	57.3	14.1	11200	115	1	1	2110	Helo
HH-1N	PACFLT	1113.0	14	96	48.2	57.3	14.1	11200	115	1	1	2110	Helo
HH-1N	LANFLT	390.6	5	97	48.2	57.3	14.1	11200	115	1	1	2110	Helo
HH-1N	PACFLT	1029.5	13	97	48.2	57.3	14.1	11200	115	1	1	2110	Helo
HH-1N	LANFLT	435.4	5	98	48.2	57.3	14.1	11200	115	1	1	2110	Helo
HH-1N	PACFLT	1152.1	13	98	48.2	57.3	14.1	11200	115	1	1	2110	Helo
HH-3A	RESERV	2245.6	6	87	62.0	72.8	16.1	21500	166	2	2	2984	Helo
HH-3A	PACFLT	2614.0	1	88	62.0	72.8	16.1	21500	166	2	2	2984	Helo
HH-3A	RESERV	1762.1	6	88	62.0	72.8	16.1	21500	166	2	2	2984	Helo
HH-3A	PACFLT	2134.4	1	89	62.0	72.8	16.1	21500	166	2	2	2984	Helo
HH-3A	RESERV	1504.0	6	89	62.0	72.8	16.1	21500	166	2	2	2984	Helo
HH-3A	RESERV	192.1	5	90	62.0	72.8	16.1	21500	166	2	2	2984	Helo
HH-46D	LANFLT	5680.5	1	87	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	PACFLT	1824.8	6	87	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	LANFLT	4268.3	2	88	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	OTHERCOM	4224.8	5	88	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	PACFLT	2035.1	19	88	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	LANFLT	3442.3	2	89	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	OTHERCOM	2056.2	11	89	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	PACFLT	1822.6	28	89	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	LANFLT	2462.2	2	90	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	OTHERCOM	1682.9	15	90	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	PACFLT	1720.4	30	90	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	LANFLT	2795.1	2	91	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	OTHERCOM	1137.9	12	91	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	PACFLT	2206.3	30	91	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	LANFLT	2231.4	3	92	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	OTHERCOM	3954.5	13	92	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	PACFLT	2130.7	30	92	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	LANFLT	2091.3	6	93	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	OTHERCOM	1608.9	13	93	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	PACFLT	1686.6	30	93	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	LANFLT	2184.5	9	94	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	OTHERCOM	932.8	12	94	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	PACFLT	1966.6	24	94	51.0	84.4	16.8	23000	166	2	2	3840	Helo

HH-46D	LANFLT	2912.2	8	95	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	OTHERCOM	1261.9	9	95	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	PACFLT	2891.6	25	95	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	LANFLT	2551.0	13	96	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	PACFLT	2550.1	28	96	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	LANFLT	2819.8	14	97	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	PACFLT	2472.6	26	97	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	LANFLT	2828.9	14	98	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-46D	PACFLT	2895.8	27	98	51.0	84.4	16.8	23000	166	2	2	3840	Helo
HH-60H	OTHERCOM	1665.8	1	89	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	OTHERCOM	605.6	2	90	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	RESERV	1005.4	10	90	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	RESERV	660.8	15	91	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	LANFLT	1480.4	2	92	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	PACFLT	2470.8	2	92	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	RESERV	870.9	14	92	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	LANFLT	1662.5	5	93	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	PACFLT	2175.1	2	93	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	RESERV	1178.2	11	93	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	LANFLT	2035.0	3	94	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	PACFLT	2509.9	2	94	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	RESERV	968.3	13	94	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	LANFLT	1919.3	6	95	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	PACFLT	2075.7	6	95	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	RESERV	969.0	17	95	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	LANFLT	2251.1	13	96	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	PACFLT	2448.5	10	96	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	RESERV	1724.7	15	96	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	LANFLT	2607.8	12	97	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	PACFLT	2763.5	9	97	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	RESERV	2010.7	16	97	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	LANFLT	2534.5	11	98	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	PACFLT	2840.5	10	98	53.8	64.1	17.0	21184	172	4	2	4048	Helo
HH-60H	RESERV	1956.7	16	98	53.8	64.1	17.0	21184	172	4	2	4048	Helo
KA-3B	PACFLT	3225.8	1	87	72.0	75.7	22.8	73000	630	3	2	26000	Cargo
KA-3B	RESERV	3760.7	8	87	72.0	75.7	22.8	73000	630	3	2	26000	Cargo
KA-3B	LANFLT	2387.6	1	88	72.0	75.7	22.8	73000	630	3	2	26000	Cargo
KA-3B	PACFLT	3030.0	1	88	72.0	75.7	22.8	73000	630	3	2	26000	Cargo
KA-3B	RESERV	2080.9	7	88	72.0	75.7	22.8	73000	630	3	2	26000	Cargo
KA-3B	LANFLT	1906.3	1	89	72.0	75.7	22.8	73000	630	3	2	26000	Cargo
KA-3B	PACFLT	1702.4	1	89	72.0	75.7	22.8	73000	630	3	2	26000	Cargo
KA-3B	RESERV	1418.0	4	89	72.0	75.7	22.8	73000	630	3	2	26000	Cargo
KA-3B	LANFLT	1854.3	1	90	72.0	75.7	22.8	73000	630	3	2	26000	Cargo
KA-3B	PACFLT	1562.5	1	90	72.0	75.7	22.8	73000	630	3	2	26000	Cargo
KA-3B	PACFLT	893.4	1	91	72.0	75.7	22.8	73000	630	3	2	26000	Cargo
KA-6D	LANFLT	4028.1	24	87	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	PACFLT	4334.2	26	87	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	LANFLT	3564.2	18	88	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	PACFLT	3912.9	24	88	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	LANFLT	2138.0	16	89	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	PACFLT	2619.3	20	89	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	RESERV	1816.9	6	89	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	LANFLT	2163.2	18	90	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	PACFLT	1969.3	22	90	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	RESERV	1523.4	6	90	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	LANFLT	1865.5	18	91	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	PACFLT	1957.8	20	91	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	RESERV	1830.9	8	91	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	LANFLT	1883.7	14	92	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	PACFLT	2029.4	12	92	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	RESERV	2054.4	8	92	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	LANFLT	2056.4	4	93	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KA-6D	PACFLT	2118.5	8	93	53.0	54.9	16.2	59000	647	3	2	18600	Cargo

KA-6D	RESERV	1805.8	6	93	53.0	54.9	16.2	59000	647	3	2	18600	Cargo
KC-130F	LANFLT	3438.6	13	87	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	NET	2721.8	1	87	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	PACFLT	4276.5	15	87	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	RESERV	1063.0	4	87	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	LANFLT	4286.0	16	88	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	NET	2103.9	1	88	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	PACFLT	5034.0	15	88	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	RESERV	935.3	3	88	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	LANFLT	3466.4	16	89	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	NET	2087.0	1	89	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	PACFLT	3538.1	15	89	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	RESERV	360.5	4	89	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	LANFLT	3919.6	16	90	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	NET	1752.4	1	90	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	PACFLT	4224.7	14	90	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	RESERV	316.7	3	90	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	LANFLT	4042.5	19	91	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	NET	2402.0	1	91	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	PACFLT	4132.4	14	91	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	LANFLT	2212.9	17	92	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	NET	2349.7	1	92	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	PACFLT	1917.9	15	92	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	LANFLT	3237.1	20	93	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	NET	1938.7	1	93	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	PACFLT	3653.5	19	93	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	LANFLT	2658.9	20	94	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	PACFLT	2355.1	19	94	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	LANFLT	2633.3	19	95	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	PACFLT	2403.3	18	95	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	LANFLT	2537.9	19	96	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	PACFLT	2401.6	18	96	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	LANFLT	2768.7	18	97	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	PACFLT	2271.6	18	97	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	LANFLT	2907.8	18	98	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130F	PACFLT	2843.6	17	98	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130T	RESERV	1077.5	9	87	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130T	RESERV	618.3	11	88	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130T	RESERV	756.8	13	89	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130T	RESERV	926.3	15	90	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130T	RESERV	548.7	19	91	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130T	RESERV	1131.2	19	92	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130T	RESERV	803.1	22	93	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130T	RESERV	1557.6	23	95	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
KC-130T	RESERV	1156.8	28	98	132.7	97.9	38.4	175000	362	6	4	16612	Cargo
MH-53E	LANFLT	3818.6	2	87	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	OTHERCOM	814.1	1	87	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	PACFLT	3109.0	3	87	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	LANFLT	788.9	4	88	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	OTHERCOM	1230.4	2	88	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	PACFLT	2601.4	8	88	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	LANFLT	1012.3	8	89	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	OTHERCOM	620.7	2	89	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	PACFLT	2846.2	10	89	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	LANFLT	3588.9	13	90	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	OTHERCOM	751.8	1	90	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	PACFLT	3222.6	11	90	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	LANFLT	4045.1	16	91	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	OTHERCOM	149.7	2	91	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	PACFLT	4017.2	11	91	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	LANFLT	3782.2	18	92	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	PACFLT	3773.0	11	92	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	LANFLT	3377.6	16	93	79.0	99.0	29.5	73500	196	3	3	11811	Helo

MH-53E	PACFLT	4395.9	10	93	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	LANFLT	4198.1	14	94	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	PACFLT	3455.8	10	94	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	RESERV	2039.0	11	94	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	LANFLT	4669.6	13	95	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	PACFLT	1692.8	14	95	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	RESERV	3843.0	12	95	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	LANFLT	5172.2	15	96	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	PACFLT	2486.6	18	96	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	RESERV	1552.5	6	96	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	LANFLT	5004.2	27	98	79.0	99.0	29.5	73500	196	3	3	11811	Helo
MH-53E	RESERV	2395.7	12	98	79.0	99.0	29.5	73500	196	3	3	11811	Helo
NT-34C	OTHERCOM	991.4	1	88	32.9	26.5	9.1	3300	322	2	1	906	Other
NT-34C	OTHERCOM	1011.0	1	89	32.9	26.5	9.1	3300	322	2	1	906	Other
NT-34C	OTHERCOM	895.1	1	90	32.9	26.5	9.1	3300	322	2	1	906	Other
O-2A	PACFLT	933.8	4	87	38.2	29.9	9.2	4630	206	2	2	764	Other
O-2A	PACFLT	996.7	4	88	38.2	29.9	9.2	4630	206	2	2	764	Other
O-2A	PACFLT	1040.0	4	89	38.2	29.9	9.2	4630	206	2	2	764	Other
O-2A	PACFLT	1049.4	4	90	38.2	29.9	9.2	4630	206	2	2	764	Other
OA-4M	LANFLT	1209.0	6	87	27.6	42.7	15.3	25500	670	2	1	11200	Other
OA-4M	PACFLT	1381.1	11	87	27.6	42.7	15.3	25500	670	2	1	11200	Other
OA-4M	LANFLT	1674.7	5	88	27.6	42.7	15.3	25500	670	2	1	11200	Other
OA-4M	PACFLT	2223.9	10	88	27.6	42.7	15.3	25500	670	2	1	11200	Other
OA-4M	LANFLT	992.8	5	89	27.6	42.7	15.3	25500	670	2	1	11200	Other
OA-4M	PACFLT	1236.1	10	89	27.6	42.7	15.3	25500	670	2	1	11200	Other
OA-4M	LANFLT	1092.1	5	90	27.6	42.7	15.3	25500	670	2	1	11200	Other
OA-4M	OTHERCOM	954.4	2	90	27.6	42.7	15.3	25500	670	2	1	11200	Other
OA-4M	PACFLT	396.2	8	90	27.6	42.7	15.3	25500	670	2	1	11200	Other
OA-4M	OTHERCOM	1603.7	5	91	27.6	42.7	15.3	25500	670	2	1	11200	Other
OV-10A	LANFLT	2165.1	8	87	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	PACFLT	1840.6	12	87	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	RESERV	456.2	18	87	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	LANFLT	2609.3	7	88	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	PACFLT	1957.0	10	88	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	RESERV	200.5	18	88	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	LANFLT	2930.8	7	89	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	PACFLT	2464.8	13	89	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	RESERV	1017.5	18	89	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	LANFLT	3712.2	6	90	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	PACFLT	2478.4	11	90	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	RESERV	924.1	12	90	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	LANFLT	3555.2	3	91	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	OTHERCOM	423.3	1	91	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	PACFLT	2682.5	5	91	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	RESERV	389.0	12	91	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	LANFLT	1035.9	3	92	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	PACFLT	1081.0	9	92	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10A	RESERV	617.6	5	92	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10D	LANFLT	1917.4	7	87	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10D	PACFLT	1804.7	11	87	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10D	LANFLT	2364.9	9	88	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10D	PACFLT	1645.7	12	88	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10D	LANFLT	2666.1	7	89	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10D	PACFLT	2477.5	10	89	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10D	LANFLT	2651.9	7	90	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10D	OTHERCOM	332.9	3	90	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10D	PACFLT	1780.0	10	90	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10D	LANFLT	2329.2	8	91	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10D	PACFLT	1881.7	15	91	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10D	LANFLT	1146.3	9	92	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10D	PACFLT	1361.8	12	92	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10D	LANFLT	722.2	10	93	40.0	41.7	15.2	14444	281	2	2	1910	Other
OV-10D	PACFLT	579.0	12	93	40.0	41.7	15.2	14444	281	2	2	1910	Other

OV-10D	RESERV	521.6	11	93	40.0	41.7	15.2	14444	281	2	2	1910	Other
P-3A	RESERV	2165.8	38	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3A	RESERV	2474.8	33	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3A	OTHERCOM	737.3	1	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3A	RESERV	2174.4	29	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3A	RESERV	1785.1	24	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	LANFLT	5659.3	2	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	OTHERCOM	2373.0	1	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	PACFLT	4548.9	24	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	RESERV	2467.4	79	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	LANFLT	5146.7	2	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	OTHERCOM	2817.0	1	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	PACFLT	4323.0	23	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	RESERV	2839.7	81	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	LANFLT	5151.7	2	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	OTHERCOM	2138.1	1	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	PACFLT	4487.0	23	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	RESERV	2406.5	80	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	LANFLT	4821.8	2	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	OTHERCOM	1364.1	3	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	PACFLT	5476.2	10	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	RESERV	2438.4	70	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	LANFLT	5773.9	2	91	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	OTHERCOM	430.1	3	91	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	PACFLT	6111.9	2	91	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	RESERV	2166.7	88	91	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	LANFLT	5694.9	5	92	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	PACFLT	6988.2	1	92	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	RESERV	2856.8	64	92	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	LANFLT	4089.3	5	93	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	PACFLT	3887.4	4	93	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	RESERV	2193.5	69	93	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	LANFLT	5195.9	3	94	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	PACFLT	5558.8	1	94	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	RESERV	1118.0	56	94	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	LANFLT	10494.7	3	95	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3B	LANFLT	4479.0	3	98	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	LANFLT	3896.7	130	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	OTHERCOM	1038.5	11	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	PACFLT	3898.2	105	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	LANFLT	4081.2	132	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	OTHERCOM	1986.4	8	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	PACFLT	4048.6	106	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	RESERV	1906.2	3	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	LANFLT	3813.3	131	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	OTHERCOM	1603.0	7	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	PACFLT	3686.0	106	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	RESERV	2345.2	8	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	LANFLT	3925.6	117	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	OTHERCOM	1180.8	4	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	PACFLT	3852.0	104	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	RESERV	2508.2	11	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	LANFLT	3921.0	107	91	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	OTHERCOM	856.4	3	91	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	PACFLT	4144.5	102	91	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	RESERV	2113.5	16	91	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	LANFLT	4363.0	100	92	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	PACFLT	4590.3	90	92	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	RESERV	2677.6	37	92	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	LANFLT	3446.0	114	93	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	PACFLT	3994.7	83	93	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	RESERV	2309.1	47	93	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	LANFLT	3687.7	110	94	100.0	117.0	34.0	135000	473	10	4	15560	Other

P-3C	PACFLT	3797.5	70	94	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	RESERV	2077.6	59	94	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	LANFLT	4125.8	104	95	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	PACFLT	4214.1	65	95	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	RESERV	2775.6	71	95	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	LANFLT	4095.8	96	96	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	PACFLT	4419.2	60	96	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	RESERV	2216.6	77	96	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	LANFLT	3971.9	92	97	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	PACFLT	4263.0	62	97	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	RESERV	2137.0	69	97	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	LANFLT	4819.6	90	98	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	PACFLT	4930.3	60	98	100.0	117.0	34.0	135000	473	10	4	15560	Other
P-3C	RESERV	2910.2	67	98	100.0	117.0	34.0	135000	473	10	4	15560	Other
QF-4N	OTHERCOM	1548.2	7	87	38.5	58.3	16.3	54600	1522	0	2	34000	Other
QF-4N	OTHERCOM	2434.3	7	88	38.5	58.3	16.3	54600	1522	0	2	34000	Other
QF-4N	OTHERCOM	857.7	10	89	38.5	58.3	16.3	54600	1522	0	2	34000	Other
QF-4N	OTHERCOM	1164.4	8	90	38.5	58.3	16.3	54600	1522	0	2	34000	Other
QF-4N	OTHERCOM	205.0	5	91	38.5	58.3	16.3	54600	1522	0	2	34000	Other
QF-86F	OTHERCOM	407.1	13	87	37.1	37.6	14.0	16860	670	0	1	5970	Other
QF-86F	OTHERCOM	833.5	12	89	37.1	37.6	14.0	16860	670	0	1	5970	Other
QF-86F	OTHERCOM	811.0	15	90	37.1	37.6	14.0	16860	670	0	1	5970	Other
QF-86F	OTHERCOM	124.6	6	91	37.1	37.6	14.0	16860	670	0	1	5970	Other
RC-12F	OTHERCOM	761.1	3	88	57.1	43.9	15.0	14000	299	3	2	1440	Other
RC-12F	OTHERCOM	1072.9	2	89	57.1	43.9	15.0	14000	299	3	2	1440	Other
RC-12F	OTHERCOM	1427.4	2	90	57.1	43.9	15.0	14000	299	3	2	1440	Other
RC-12M	OTHERCOM	740.9	1	90	57.1	43.9	15.0	14000	299	3	2	1440	Other
RC-12M	LANFLT	8251.6	1	93	57.1	43.9	15.0	14000	299	3	2	1440	Other
RC-12M	LANFLT	1661.1	1	94	57.1	43.9	15.0	14000	299	3	2	1440	Other
RC-12M	LANFLT	993.5	2	95	57.1	43.9	15.0	14000	299	3	2	1440	Other
RC-12M	LANFLT	651.1	2	98	57.1	43.9	15.0	14000	299	3	2	1440	Other
RF-4B	PACFLT	3769.7	21	87	38.5	63.0	16.3	54600	1522	2	2	34000	Other
RF-4B	OTHERCOM	1053.3	1	88	38.5	63.0	16.3	54600	1522	2	2	34000	Other
RF-4B	PACFLT	4569.3	21	88	38.5	63.0	16.3	54600	1522	2	2	34000	Other
RF-4B	OTHERCOM	1202.7	1	89	38.5	63.0	16.3	54600	1522	2	2	34000	Other
RF-4B	PACFLT	2596.3	21	89	38.5	63.0	16.3	54600	1522	2	2	34000	Other
RF-4B	PACFLT	2084.5	8	90	38.5	63.0	16.3	54600	1522	2	2	34000	Other
RP-3A	LANFLT	2430.2	1	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
RP-3A	OTHERCOM	2055.2	4	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
RP-3A	LANFLT	2163.0	1	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
RP-3A	OTHERCOM	2316.6	4	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
RP-3A	LANFLT	2807.0	1	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
RP-3A	OTHERCOM	2394.4	4	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
RP-3A	LANFLT	4046.2	1	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
RP-3A	OTHERCOM	1885.2	4	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
RP-3A	LANFLT	4764.0	1	91	100.0	117.0	34.0	135000	473	10	4	15560	Other
RP-3D	LANFLT	4146.8	1	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
RP-3D	LANFLT	3376.5	1	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
RP-3D	LANFLT	2231.2	2	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
RP-3D	LANFLT	1793.4	2	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
RP-3D	LANFLT	5182.9	2	91	100.0	117.0	34.0	135000	473	10	4	15560	Other
RP-3D	LANFLT	4410.1	4	92	100.0	117.0	34.0	135000	473	10	4	15560	Other
RP-3D	LANFLT	2603.0	5	93	100.0	117.0	34.0	135000	473	10	4	15560	Other
S-3B	LANFLT	2105.3	9	88	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	OTHERCOM	3052.6	2	88	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	LANFLT	4059.0	23	89	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	OTHERCOM	4494.5	1	89	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	LANFLT	4869.6	34	90	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	OTHERCOM	2734.8	2	90	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	LANFLT	4314.4	54	91	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	OTHERCOM	1982.0	2	91	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	LANFLT	3144.0	50	92	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	PACFLT	6173.1	11	92	68.8	53.4	22.9	52500	518	4	2	18550	Other

S-3B	LANFLT	3061.0	50	93	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	PACFLT	3179.4	38	93	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	LANFLT	3249.7	43	94	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	PACFLT	3024.2	58	94	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	LANFLT	3239.8	45	95	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	PACFLT	3325.4	65	95	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	LANFLT	3894.9	44	96	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	PACFLT	3721.7	62	96	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	LANFLT	3640.4	44	97	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	PACFLT	3843.0	57	97	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	LANFLT	4689.7	43	98	68.8	53.4	22.9	52500	518	4	2	18550	Other
S-3B	PACFLT	4400.4	64	98	68.8	53.4	22.9	52500	518	4	2	18550	Other
SH-2G	OTHERCOM	479.9	1	91	44.0	52.7	15.6	13300	165	3	2	2878	Helo
SH-2G	LANFLT	9777.7	1	92	44.0	52.7	15.6	13300	165	3	2	2878	Helo
SH-2G	LANFLT	5864.4	1	93	44.0	52.7	15.6	13300	165	3	2	2878	Helo
SH-2G	RESERV	1613.5	15	94	44.0	52.7	15.6	13300	165	3	2	2878	Helo
SH-2G	RESERV	1645.1	16	95	44.0	52.7	15.6	13300	165	3	2	2878	Helo
SH-2G	RESERV	1544.6	15	98	44.0	52.7	15.6	13300	165	3	2	2878	Helo
SH-3D	LANFLT	1856.3	14	87	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	PACFLT	2992.3	6	87	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	RESERV	2114.6	12	87	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	LANFLT	1580.1	8	88	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	PACFLT	2712.7	3	88	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	RESERV	1653.9	12	88	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	LANFLT	1474.2	7	89	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	PACFLT	1467.5	5	89	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	RESERV	1731.1	12	89	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	LANFLT	1415.1	7	90	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	PACFLT	1448.9	7	90	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	RESERV	2034.6	4	90	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	LANFLT	1715.9	8	91	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	PACFLT	1608.4	9	91	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	LANFLT	1845.6	4	92	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	PACFLT	1832.3	7	92	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	LANFLT	4129.6	3	93	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3D	PACFLT	1841.7	4	93	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	LANFLT	3113.1	15	87	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	PACFLT	2575.9	16	87	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	LANFLT	1881.5	17	88	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	PACFLT	1951.6	15	88	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	LANFLT	1900.1	18	89	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	PACFLT	2504.5	11	89	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	LANFLT	1930.0	18	90	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	OTHERCOM	500.9	4	90	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	PACFLT	1942.3	13	90	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	LANFLT	2190.1	19	91	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	PACFLT	2043.5	13	91	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	LANFLT	2049.6	15	92	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	PACFLT	1783.4	11	92	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	LANFLT	1559.2	6	93	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	PACFLT	2169.6	9	93	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	LANFLT	3364.4	2	94	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	PACFLT	1749.8	7	94	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-3G	LANFLT	3909.8	1	95	62.0	72.8	16.1	21500	166	2	2	2984	Helo
SH-60B	LANFLT	2761.2	36	87	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	PACFLT	2688.8	37	87	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	LANFLT	2658.9	44	88	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	OTHERCOM	1116.1	7	88	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	PACFLT	2466.6	45	88	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	LANFLT	2486.2	52	89	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	OTHERCOM	1145.8	7	89	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	PACFLT	2340.0	50	89	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	LANFLT	2384.4	59	90	53.8	64.1	17.0	21884	145	3	2	3660	Helo

SH-60B	OTHERCOM	869.3	5	90	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	PACFLT	2335.4	54	90	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	LANFLT	2281.8	61	91	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	OTHERCOM	157.2	4	91	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	PACFLT	2210.5	59	91	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	LANFLT	2396.5	62	92	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	PACFLT	2427.3	62	92	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	LANFLT	1945.9	68	93	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	PACFLT	2304.6	66	93	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	LANFLT	2271.0	74	94	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	PACFLT	2571.3	68	94	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	LANFLT	2660.2	73	95	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	PACFLT	2883.1	77	95	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	LANFLT	2293.7	73	96	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	PACFLT	2349.0	80	96	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	LANFLT	2648.4	67	97	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	PACFLT	2392.5	80	97	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	LANFLT	2874.1	68	98	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60B	PACFLT	2434.8	79	98	53.8	64.1	17.0	21884	145	3	2	3660	Helo
SH-60F	OTHERCOM	877.6	1	87	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	OTHERCOM	2225.7	1	88	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	OTHERCOM	1157.9	1	89	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	PACFLT	2133.4	3	89	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	LANFLT	4592.0	1	90	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	OTHERCOM	642.7	2	90	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	PACFLT	2577.2	13	90	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	LANFLT	3065.0	1	91	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	OTHERCOM	294.6	2	91	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	PACFLT	2208.7	26	91	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	LANFLT	1359.3	14	92	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	PACFLT	2541.5	29	92	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	LANFLT	1601.9	23	93	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	PACFLT	2106.3	44	93	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	LANFLT	2105.5	25	94	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	PACFLT	2040.5	46	94	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	LANFLT	2488.1	30	95	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	PACFLT	2587.2	43	95	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	LANFLT	2636.6	30	96	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	PACFLT	2409.2	41	96	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	LANFLT	2782.1	29	97	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	PACFLT	2510.5	41	97	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	LANFLT	2343.7	27	98	53.8	64.1	17.0	23500	169	3	2	3660	Helo
SH-60F	PACFLT	2711.8	42	98	53.8	64.1	17.0	23500	169	3	2	3660	Helo
T-2B	NET	1877.1	12	87	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2B	NET	1563.7	13	88	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2B	NET	2095.6	13	89	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2B	NET	1841.7	13	90	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2B	NET	1391.9	14	91	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2B	NET	1316.4	1	92	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	LANFLT	830.0	3	87	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	NET	855.3	7	87	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	OTHERCOM	573.2	158	87	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	PACFLT	839.5	3	87	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	LANFLT	874.1	3	88	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	NET	790.0	7	88	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	OTHERCOM	587.9	165	88	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	PACFLT	768.5	3	88	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	LANFLT	1158.9	3	89	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	NET	965.6	7	89	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	OTHERCOM	275.6	167	89	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	PACFLT	870.3	3	89	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	LANFLT	1006.2	3	90	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	NET	1208.8	7	90	38.1	38.7	14.8	13191	530	2	2	6000	Other

T-2C	OTHERCOM	749.5	178	90	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	PACFLT	899.9	3	90	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	LANFLT	971.5	3	91	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	NET	843.8	8	91	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	OTHERCOM	534.7	189	91	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	PACFLT	809.0	3	91	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	LANFLT	944.9	4	92	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	NET	874.8	206	92	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	PACFLT	1036.6	3	92	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	LANFLT	683.9	4	93	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	NET	559.3	135	93	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	PACFLT	665.5	3	93	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	NET	572.2	114	94	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	NET	661.7	102	95	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-2C	NET	831.6	89	98	38.1	38.7	14.8	13191	530	2	2	6000	Other
T-34B	OTHERCOM	155.5	49	87	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34B	OTHERCOM	200.5	38	90	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34B	OTHERCOM	88.0	30	91	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34B	OTHERCOM	118.5	24	92	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	NET	344.2	5	87	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	OTHERCOM	823.1	296	87	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	NET	346.6	1	88	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	OTHERCOM	1107.8	300	88	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	NET	390.2	1	89	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	OTHERCOM	1185.0	300	89	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	NET	352.4	2	90	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	OTHERCOM	981.5	300	90	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	LANFLT	1509.6	3	91	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	NET	414.4	2	91	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	OTHERCOM	95.2	300	91	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	PACFLT	956.8	1	91	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	LANFLT	1461.4	4	92	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	NET	633.7	290	92	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	PACFLT	987.9	10	92	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	LANFLT	1076.2	7	93	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	NET	250.7	322	93	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	PACFLT	737.3	10	93	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	LANFLT	671.5	8	94	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	NET	395.9	268	94	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	PACFLT	719.7	10	94	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	LANFLT	877.8	7	95	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	NET	390.7	275	95	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	PACFLT	878.8	8	95	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	LANFLT	655.0	7	96	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	NET	392.0	273	96	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	PACFLT	1058.1	10	96	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	LANFLT	1040.4	7	97	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	NET	404.7	273	97	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	PACFLT	834.5	8	97	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	LANFLT	771.6	10	98	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	NET	398.4	283	98	32.9	26.5	9.1	3300	322	2	1	906	Other
T-34C	PACFLT	724.7	11	98	32.9	26.5	9.1	3300	322	2	1	906	Other
T-38A	OTHERCOM	450.5	5	87	25.3	46.4	12.1	12500	812	2	2	5800	Other
T-38A	OTHERCOM	450.1	5	88	25.3	46.4	12.1	12500	812	2	2	5800	Other
T-38A	OTHERCOM	143.8	5	89	25.3	46.4	12.1	12500	812	2	2	5800	Other
T-38A	OTHERCOM	426.2	5	90	25.3	46.4	12.1	12500	812	2	2	5800	Other
T-38A	OTHERCOM	190.2	5	91	25.3	46.4	12.1	12500	812	2	2	5800	Other
T-38B	PACFLT	552.7	1	88	25.3	46.4	12.1	12500	812	2	2	5800	Other
T-38B	OTHERCOM	98.8	1	89	25.3	46.4	12.1	12500	812	2	2	5800	Other
T-38B	OTHERCOM	259.9	1	90	25.3	46.4	12.1	12500	812	2	2	5800	Other
T-38B	OTHERCOM	133.5	1	91	25.3	46.4	12.1	12500	812	2	2	5800	Other
T-39D	LANFLT	1366.7	1	87	44.8	46.1	16.0	20172	563	2	2	6600	Other
T-39D	NET	16746.9	1	87	44.8	46.1	16.0	20172	563	2	2	6600	Other

T-39D	OTHERCOM	497.3	3	87	44.8	46.1	16.0	20172	563	2	2	6600	Other
T-39D	LANFLT	1255.5	1	88	44.8	46.1	16.0	20172	563	2	2	6600	Other
T-39D	NET	14718.6	3	88	44.8	46.1	16.0	20172	563	2	2	6600	Other
T-39D	OTHERCOM	108.7	3	88	44.8	46.1	16.0	20172	563	2	2	6600	Other
T-39D	LANFLT	740.8	1	89	44.8	46.1	16.0	20172	563	2	2	6600	Other
T-39D	NET	4689.3	2	89	44.8	46.1	16.0	20172	563	2	2	6600	Other
T-39D	OTHERCOM	2037.0	3	89	44.8	46.1	16.0	20172	563	2	2	6600	Other
T-39D	NET	3165.8	2	90	44.8	46.1	16.0	20172	563	2	2	6600	Other
T-39D	OTHERCOM	112.4	3	90	44.8	46.1	16.0	20172	563	2	2	6600	Other
T-39D	NET	3553.7	2	91	44.8	46.1	16.0	20172	563	2	2	6600	Other
T-39D	OTHERCOM	68.0	3	91	44.8	46.1	16.0	20172	563	2	2	6600	Other
T-39D	NET	5972.9	1	92	44.8	46.1	16.0	20172	563	2	2	6600	Other
T-44A	NET	432.7	47	87	50.3	35.6	14.2	10100	256	2	2	2200	Other
T-44A	NET	331.0	50	88	50.3	35.6	14.2	10100	256	2	2	2200	Other
T-44A	NET	499.2	50	89	50.3	35.6	14.2	10100	256	2	2	2200	Other
T-44A	NET	535.6	53	90	50.3	35.6	14.2	10100	256	2	2	2200	Other
T-44A	NET	549.6	55	91	50.3	35.6	14.2	10100	256	2	2	2200	Other
T-44A	NET	769.6	54	92	50.3	35.6	14.2	10100	256	2	2	2200	Other
T-44A	NET	260.7	57	93	50.3	35.6	14.2	10100	256	2	2	2200	Other
T-44A	NET	410.9	56	94	50.3	35.6	14.2	10100	256	2	2	2200	Other
T-44A	NET	418.3	56	95	50.3	35.6	14.2	10100	256	2	2	2200	Other
T-44A	NET	513.3	55	98	50.3	35.6	14.2	10100	256	2	2	2200	Other
T-45A	NET	358.3	23	93	30.8	38.9	13.1	13000	645	2	1	5845	Other
T-45A	NET	891.5	42	94	30.8	38.9	13.1	13000	645	2	1	5845	Other
T-45A	NET	1284.5	53	95	30.8	38.9	13.1	13000	645	2	1	5845	Other
T-45A	NET	1608.2	88	98	30.8	38.9	13.1	13000	645	2	1	5845	Other
TA-3B	LANFLT	4985.1	4	87	72.0	75.7	22.8	73000	630	3	2	26000	Other
TA-3B	RESERV	1736.5	1	87	72.0	75.7	22.8	73000	630	3	2	26000	Other
TA-3B	LANFLT	3341.2	5	88	72.0	75.7	22.8	73000	630	3	2	26000	Other
TA-3B	LANFLT	2160.5	5	89	72.0	75.7	22.8	73000	630	3	2	26000	Other
TA-3B	LANFLT	1857.4	5	90	72.0	75.7	22.8	73000	630	3	2	26000	Other
TA-3B	LANFLT	1828.4	5	91	72.0	75.7	22.8	73000	630	3	2	26000	Other
TA-4F	LANFLT	1390.9	5	87	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-4F	PACFLT	1060.0	11	87	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-4F	LANFLT	2158.0	5	88	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-4F	PACFLT	1351.8	5	88	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-4F	RESERV	643.3	3	88	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-4F	LANFLT	1450.8	5	89	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-4F	PACFLT	1056.3	5	89	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-4F	RESERV	336.5	6	89	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-4F	RESERV	1103.5	6	90	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-4F	RESERV	1441.9	6	91	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-4F	LANFLT	700.7	1	92	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-4F	PACFLT	1957.8	1	92	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-4F	RESERV	526.8	7	92	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-4F	PACFLT	929.4	1	93	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-4F	RESERV	548.8	5	93	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-4F	PACFLT	605.2	1	94	27.6	42.7	15.3	25500	670	2	1	11200	Other
TA-7C	LANFLT	1434.0	18	87	39.4	26.9	6.6	2725	138	2	1	220	Other
TA-7C	OTHERCOM	959.6	17	87	39.4	26.9	6.6	2725	138	2	1	220	Other
TA-7C	PACFLT	1766.5	9	87	39.4	26.9	6.6	2725	138	2	1	220	Other
TA-7C	LANFLT	997.5	12	88	39.4	26.9	6.6	2725	138	2	1	220	Other
TA-7C	OTHERCOM	1279.1	19	88	39.4	26.9	6.6	2725	138	2	1	220	Other
TA-7C	PACFLT	1438.7	13	88	39.4	26.9	6.6	2725	138	2	1	220	Other
TA-7C	LANFLT	1960.8	6	89	39.4	26.9	6.6	2725	138	2	1	220	Other
TA-7C	OTHERCOM	1509.1	17	89	39.4	26.9	6.6	2725	138	2	1	220	Other
TA-7C	PACFLT	1344.9	14	89	39.4	26.9	6.6	2725	138	2	1	220	Other
TA-7C	LANFLT	1698.7	6	90	39.4	26.9	6.6	2725	138	2	1	220	Other
TA-7C	OTHERCOM	1430.2	16	90	39.4	26.9	6.6	2725	138	2	1	220	Other
TA-7C	PACFLT	1134.5	14	90	39.4	26.9	6.6	2725	138	2	1	220	Other
TA-7C	OTHERCOM	1414.3	7	91	39.4	26.9	6.6	2725	138	2	1	220	Other
TA-7C	PACFLT	846.5	10	91	39.4	26.9	6.6	2725	138	2	1	220	Other
TAV-8B	LANFLT	1503.4	1	87	25.3	55.9	13.8	25000	737	2	1	21500	Other

TAV-8B	LANFLT	2329.8	5	88	25.3	55.9	13.8	25000	737	2	1	21500	Other
TAV-8B	OTHERCOM	1574.5	1	88	25.3	55.9	13.8	25000	737	2	1	21500	Other
TAV-8B	LANFLT	1809.7	11	89	25.3	55.9	13.8	25000	737	2	1	21500	Other
TAV-8B	OTHERCOM	1432.0	1	89	25.3	55.9	13.8	25000	737	2	1	21500	Other
TAV-8B	LANFLT	1523.9	15	90	25.3	55.9	13.8	25000	737	2	1	21500	Other
TAV-8B	OTHERCOM	1120.6	1	90	25.3	55.9	13.8	25000	737	2	1	21500	Other
TAV-8B	LANFLT	1959.1	15	91	25.3	55.9	13.8	25000	737	2	1	21500	Other
TAV-8B	OTHERCOM	176.7	1	91	25.3	55.9	13.8	25000	737	2	1	21500	Other
TAV-8B	LANFLT	837.8	15	92	25.3	55.9	13.8	25000	737	2	1	21500	Other
TAV-8B	LANFLT	1312.6	18	93	25.3	55.9	13.8	25000	737	2	1	21500	Other
TAV-8B	LANFLT	1268.4	15	94	25.3	55.9	13.8	25000	737	2	1	21500	Other
TAV-8B	LANFLT	1565.5	17	95	25.3	55.9	13.8	25000	737	2	1	21500	Other
TAV-8B	LANFLT	1570.0	14	98	25.3	55.9	13.8	25000	737	2	1	21500	Other
TC-130G	LANFLT	4749.0	1	88	132.7	100.6	38.6	155000	374	11	4	16612	Other
TC-130G	LANFLT	891.8	1	89	132.7	100.6	38.6	155000	374	11	4	16612	Other
TC-130G	LANFLT	5391.4	1	90	132.7	100.6	38.6	155000	374	11	4	16612	Other
TC-130G	NET	1643.3	1	95	132.7	100.6	38.6	155000	374	11	4	16612	Other
TC-130G	NET	1792.3	1	98	132.7	100.6	38.6	155000	374	11	4	16612	Other
TC-130Q	LANFLT	4456.4	1	88	132.7	100.6	38.6	155000	374	11	4	16612	Other
TC-130Q	LANFLT	2040.2	1	89	132.7	100.6	38.6	155000	374	11	4	16612	Other
TC-130Q	LANFLT	6751.0	1	90	132.7	100.6	38.6	155000	374	11	4	16612	Other
TC-130Q	LANFLT	7848.6	1	91	132.7	100.6	38.6	155000	374	11	4	16612	Other
TC-18F	PACFLT	4418.6	2	96	145.9	152.1	42.5	327000	627	2	4	75200	Other
TC-18F	PACFLT	5260.5	2	97	145.9	152.1	42.5	327000	627	2	4	75200	Other
TC-18F	PACFLT	4720.6	3	98	145.9	152.1	42.5	327000	627	2	4	75200	Other
TC-4C	LANFLT	2275.7	4	87	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	PACFLT	2191.9	4	87	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	LANFLT	2045.1	4	88	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	PACFLT	2097.9	4	88	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	LANFLT	2210.2	4	89	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	PACFLT	2126.0	4	89	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	LANFLT	2706.7	4	90	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	PACFLT	2993.5	4	90	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	LANFLT	2489.9	4	91	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	PACFLT	2408.0	4	91	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	LANFLT	2064.5	4	92	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	PACFLT	1835.0	4	92	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	LANFLT	1523.6	4	93	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	PACFLT	1528.4	4	93	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	LANFLT	1367.7	4	94	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	PACFLT	1484.4	4	94	78.6	67.1	22.9	36000	348	2	2	5400	Other
TC-4C	PACFLT	1388.8	4	95	78.6	67.1	22.9	36000	348	2	2	5400	Other
TE-2C	LANFLT	3596.0	1	87	81.0	58.0	18.0	51569	375	5	2	10458	Other
TE-2C	PACFLT	3010.3	1	87	81.0	58.0	18.0	51569	375	5	2	10458	Other
TE-2C	PACFLT	3022.9	1	89	81.0	58.0	18.0	51569	375	5	2	10458	Other
TE-2C	PACFLT	3814.4	1	90	81.0	58.0	18.0	51569	375	5	2	10458	Other
TE-2C	LANFLT	3781.0	1	92	81.0	58.0	18.0	51569	375	5	2	10458	Other
TE-2C	PACFLT	3405.8	1	92	81.0	58.0	18.0	51569	375	5	2	10458	Other
TE-2C	LANFLT	1915.2	2	93	81.0	58.0	18.0	51569	375	5	2	10458	Other
TE-2C	LANFLT	2704.6	2	94	81.0	58.0	18.0	51569	375	5	2	10458	Other
TE-2C	LANFLT	3580.0	1	95	81.0	58.0	18.0	51569	375	5	2	10458	Other
TF-16N	LANFLT	1336.2	1	88	32.8	49.5	16.8	42300	1500	2	1	25000	Other
TF-16N	PACFLT	535.9	2	88	32.8	49.5	16.8	42300	1500	2	1	25000	Other
TF-16N	LANFLT	1925.8	2	89	32.8	49.5	16.8	42300	1500	2	1	25000	Other
TF-16N	PACFLT	2493.0	2	89	32.8	49.5	16.8	42300	1500	2	1	25000	Other
TF-16N	LANFLT	1835.5	2	90	32.8	49.5	16.8	42300	1500	2	1	25000	Other
TF-16N	PACFLT	1593.0	2	90	32.8	49.5	16.8	42300	1500	2	1	25000	Other
TF-16N	LANFLT	1262.9	2	91	32.8	49.5	16.8	42300	1500	2	1	25000	Other
TF-16N	PACFLT	394.6	2	91	32.8	49.5	16.8	42300	1500	2	1	25000	Other
TF-16N	LANFLT	1165.9	2	92	32.8	49.5	16.8	42300	1500	2	1	25000	Other
TF-16N	PACFLT	670.5	2	92	32.8	49.5	16.8	42300	1500	2	1	25000	Other
TF-16N	LANFLT	1275.2	2	93	32.8	49.5	16.8	42300	1500	2	1	25000	Other
TF-16N	PACFLT	1116.1	2	93	32.8	49.5	16.8	42300	1500	2	1	25000	Other

TF-16N	LANFLT	892.7	2	94	32.8	49.5	16.8	42300	1500	2	1	25000	Other
TF-16N	PACFLT	848.6	2	94	32.8	49.5	16.8	42300	1500	2	1	25000	Other
TF-16N	LANFLT	470.4	2	95	32.8	49.5	16.8	42300	1500	2	1	25000	Other
TF-16N	PACFLT	602.2	2	95	32.8	49.5	16.8	42300	1500	2	1	25000	Other
TH-1L	OTHERCOM	328.7	2	87	44.0	53.0	12.7	9500	144	2	1	1173	Helo
TH-1L	OTHERCOM	211.3	3	88	44.0	53.0	12.7	9500	144	2	1	1173	Helo
TH-1L	OTHERCOM	376.2	2	89	44.0	53.0	12.7	9500	144	2	1	1173	Helo
TH-1L	OTHERCOM	371.5	2	90	44.0	53.0	12.7	9500	144	2	1	1173	Helo
TH-1L	OTHERCOM	364.9	2	91	44.0	53.0	12.7	9500	144	2	1	1173	Helo
TH-57A	OTHERCOM	793.9	2	87	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57A	OTHERCOM	1179.9	2	88	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57A	OTHERCOM	1066.3	2	89	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57A	OTHERCOM	1029.0	2	90	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57A	OTHERCOM	184.3	2	91	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57B	NET	218.0	40	87	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57B	NET	233.1	42	88	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57B	NET	328.8	43	89	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57B	NET	315.3	45	90	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57B	NET	360.5	43	91	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57B	NET	515.0	43	92	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57B	NET	168.2	52	93	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57B	NET	169.7	46	94	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57B	NET	319.3	46	95	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57B	NET	357.1	45	98	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57C	NET	274.4	81	87	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57C	NET	219.9	86	88	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57C	NET	314.4	89	89	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57C	NET	322.4	86	90	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57C	NET	350.8	88	91	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57C	NET	513.5	87	92	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57C	NET	185.9	85	93	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57C	NET	408.0	75	94	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57C	NET	309.9	73	95	33.4	39.1	9.6	3000	150	2	1	338	Helo
TH-57C	NET	369.0	71	98	33.4	39.1	9.6	3000	150	2	1	338	Helo
TP-3A	LANFLT	3806.3	6	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	PACFLT	5846.2	4	87	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	LANFLT	3007.2	7	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	PACFLT	3570.4	5	88	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	LANFLT	3149.0	7	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	PACFLT	3446.6	5	89	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	LANFLT	3226.8	7	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	PACFLT	2796.6	5	90	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	LANFLT	3244.0	7	91	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	PACFLT	3279.6	5	91	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	LANFLT	3259.4	5	92	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	PACFLT	3573.5	6	92	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	LANFLT	2505.0	10	93	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	PACFLT	4982.1	1	93	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	LANFLT	2474.4	11	94	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	LANFLT	2512.6	11	95	100.0	117.0	34.0	135000	473	10	4	15560	Other
TP-3A	LANFLT	3181.0	3	98	100.0	117.0	34.0	135000	473	10	4	15560	Other
U-6A	OTHERCOM	314.7	1	87	48.0	30.4	9.0	5100	140	1	1	1286	Cargo
U-6A	OTHERCOM	372.9	1	88	48.0	30.4	9.0	5100	140	1	1	1286	Cargo
U-6A	OTHERCOM	152.5	1	89	48.0	30.4	9.0	5100	140	1	1	1286	Cargo
U-6A	OTHERCOM	254.4	3	90	48.0	30.4	9.0	5100	140	1	1	1286	Cargo
U-6A	OTHERCOM	110.6	3	91	48.0	30.4	9.0	5100	140	1	1	1286	Cargo
UC-12B	LANFLT	1287.8	12	87	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	NET	9373.6	20	87	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	OTHERCOM	1503.9	5	87	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	PACFLT	1678.8	17	87	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	RESERV	1799.3	12	87	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	LANFLT	763.3	12	88	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	NET	9124.2	17	88	54.6	43.9	15.0	12500	333	3	2	1916	Cargo

UC-12B	OTHERCOM	1318.0	7	88	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	PACFLT	1543.1	17	88	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	RESERV	1819.5	13	88	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	LANFLT	704.5	14	89	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	NET	6755.2	12	89	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	OTHERCOM	678.4	7	89	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	PACFLT	1293.7	18	89	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	RESERV	1432.0	13	89	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	LANFLT	768.4	14	90	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	NET	3997.0	12	90	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	OTHERCOM	1010.5	7	90	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	PACFLT	1398.3	18	90	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	RESERV	880.8	14	90	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	LANFLT	877.5	14	91	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	NET	3886.9	11	91	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	OTHERCOM	922.6	7	91	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	PACFLT	1296.9	18	91	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	RESERV	1272.7	14	91	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	LANFLT	893.4	15	92	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	NET	5138.0	10	92	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	OTHERCOM	4798.6	7	92	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	PACFLT	2546.3	16	92	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	RESERV	1464.5	13	92	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	LANFLT	5761.9	16	93	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	NET	9310.5	12	93	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	OTHERCOM	808.3	7	93	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	PACFLT	4721.1	18	93	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	RESERV	2759.3	11	93	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	LANFLT	2103.0	11	94	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	NET	7831.0	10	94	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	OTHERCOM	573.7	7	94	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	PACFLT	1141.4	17	94	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	RESERV	1954.1	9	94	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	LANFLT	2062.2	11	95	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	NET	877.9	10	95	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	OTHERCOM	818.6	7	95	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	PACFLT	1173.1	16	95	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	RESERV	1579.2	11	95	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	LANFLT	800.1	16	96	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	NET	879.6	5	96	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	PACFLT	934.8	18	96	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	RESERV	845.9	13	96	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	LANFLT	1607.0	17	97	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	NET	1214.8	5	97	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	PACFLT	1881.2	19	97	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	RESERV	647.8	15	97	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	LANFLT	1681.8	17	98	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	NET	706.3	14	98	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	PACFLT	1506.1	14	98	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12B	RESERV	777.5	8	98	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	OTHERCOM	1176.3	2	87	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	PACFLT	827.0	4	87	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	OTHERCOM	1240.7	4	88	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	PACFLT	742.6	6	88	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	OTHERCOM	681.1	4	89	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	PACFLT	767.8	6	89	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	OTHERCOM	920.7	4	90	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	PACFLT	877.5	6	90	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	OTHERCOM	604.5	4	91	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	PACFLT	1273.8	6	91	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	OTHERCOM	1608.3	4	92	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	PACFLT	1225.8	6	92	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	OTHERCOM	1428.3	4	93	54.6	43.9	15.0	12500	333	3	2	1916	Cargo

UC-12F	PACFLT	5021.7	5	93	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	OTHERCOM	586.0	4	94	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	PACFLT	3176.4	6	94	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	OTHERCOM	689.8	4	95	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	PACFLT	1734.3	6	95	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	PACFLT	1810.8	8	96	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	PACFLT	1813.5	10	97	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12F	PACFLT	1640.5	10	98	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	LANFLT	2414.0	5	88	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	OTHERCOM	2865.4	2	88	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	LANFLT	453.7	3	89	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	OTHERCOM	2955.9	8	89	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	LANFLT	7768.2	3	90	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	LANFLT	7290.6	3	91	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	LANFLT	6162.2	2	92	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	OTHERCOM	2839.3	8	92	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	LANFLT	8668.1	4	93	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	OTHERCOM	3723.3	6	93	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	LANFLT	3576.8	4	94	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	OTHERCOM	2181.7	6	94	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	LANFLT	4136.9	4	95	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	OTHERCOM	2110.9	6	95	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	LANFLT	544.7	4	98	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-12M	OTHERCOM	1067.9	5	98	54.6	43.9	15.0	12500	333	3	2	1916	Cargo
UC-880	OTHERCOM	5892.2	1	87	120.0	129.4	36.3	184500	460	5	4	44800	Cargo
UC-880	OTHERCOM	2730.9	1	88	120.0	129.4	36.3	184500	460	5	4	44800	Cargo
UC-880	OTHERCOM	2849.0	1	89	120.0	129.4	36.3	184500	460	5	4	44800	Cargo
UC-880	OTHERCOM	1844.9	1	90	120.0	129.4	36.3	184500	460	5	4	44800	Cargo
UC-880	OTHERCOM	3084.4	1	91	120.0	129.4	36.3	184500	460	5	4	44800	Cargo
UC-8A	OTHERCOM	447.3	1	87	96.0	79.0	28.8	49200	261	3	2	6676	Cargo
UC-8A	OTHERCOM	301.8	1	88	96.0	79.0	28.8	49200	261	3	2	6676	Cargo
UC-8A	OTHERCOM	235.5	1	89	96.0	79.0	28.8	49200	261	3	2	6676	Cargo
UH-1E	RESERV	157.6	3	87	44.0	53.0	12.7	9500	144	2	1	1173	Helo
UH-1N	LANFLT	1414.4	40	87	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	NET	12360.0	13	87	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	OTHERCOM	719.5	4	87	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	PACFLT	1271.1	66	87	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	RESERV	433.2	21	87	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	LANFLT	1581.6	42	88	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	NET	12125.6	12	88	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	OTHERCOM	820.6	4	88	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	PACFLT	1166.1	66	88	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	RESERV	222.6	24	88	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	LANFLT	1343.5	41	89	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	NET	9606.5	9	89	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	OTHERCOM	901.9	4	89	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	PACFLT	1128.8	66	89	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	RESERV	325.9	24	89	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	LANFLT	2128.8	41	90	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	NET	12393.5	9	90	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	OTHERCOM	1112.8	4	90	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	PACFLT	1538.7	66	90	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	RESERV	758.8	20	90	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	LANFLT	1810.8	42	91	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	NET	6372.7	477	91	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	PACFLT	1424.3	66	91	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	RESERV	656.4	16	91	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	LANFLT	597.5	24	92	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	OTHERCOM	778.2	6	92	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	PACFLT	558.5	65	92	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	RESERV	621.9	24	92	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	LANFLT	1248.8	26	93	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	NET	8564.2	8	93	48.2	57.3	14.1	11200	115	1	1	2110	Helo

UH-1N	OTHERCOM	788.5	5	93	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	PACFLT	1155.8	57	93	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	RESERV	430.2	26	93	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	LANFLT	1369.8	25	94	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	OTHERCOM	779.2	5	94	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	PACFLT	1188.0	54	94	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	LANFLT	1455.8	27	95	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	NET	1276.2	4	95	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	PACFLT	1353.9	54	95	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	RESERV	958.6	13	95	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	LANFLT	1401.7	29	96	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	NET	1093.6	5	96	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	PACFLT	1322.0	54	96	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	RESERV	717.3	20	96	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	LANFLT	1513.9	24	97	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	NET	1344.5	5	97	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	PACFLT	1626.9	49	97	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	RESERV	693.0	20	97	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	LANFLT	1640.4	25	98	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	NET	15867.2	4	98	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	PACFLT	1547.0	55	98	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-1N	RESERV	607.4	20	98	48.2	57.3	14.1	11200	115	1	1	2110	Helo
UH-3A	OTHERCOM	1856.7	6	87	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3A	OTHERCOM	1523.4	6	88	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3A	OTHERCOM	1767.5	7	89	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3A	OTHERCOM	1158.2	7	90	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3A	PACFLT	3467.7	1	93	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3H	NET	600.6	3	94	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3H	LANFLT	1597.1	23	95	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3H	NET	1016.3	3	95	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3H	PACFLT	4042.6	2	95	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3H	LANFLT	1806.9	26	96	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3H	NET	865.6	3	96	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3H	PACFLT	3370.2	2	96	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3H	LANFLT	1318.0	24	97	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3H	NET	1200.7	3	97	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3H	PACFLT	1728.5	6	97	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3H	LANFLT	1699.2	24	98	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3H	NET	1164.1	3	98	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3H	PACFLT	1915.2	6	98	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-3H	RESERV	1731.9	10	98	62.0	72.8	16.1	21500	166	2	2	2984	Helo
UH-46D	LANFLT	3709.0	6	87	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	OTHERCOM	1264.3	1	87	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	LANFLT	2457.1	7	88	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	OTHERCOM	1005.0	1	88	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	PACFLT	2784.3	2	88	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	LANFLT	1857.5	10	89	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	OTHERCOM	1237.4	1	89	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	PACFLT	1415.0	5	89	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	LANFLT	1814.9	11	90	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	OTHERCOM	1471.9	1	90	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	PACFLT	1527.9	5	90	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	LANFLT	1790.5	11	91	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	PACFLT	1910.2	5	91	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	LANFLT	2029.7	8	92	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	PACFLT	1544.8	5	92	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	LANFLT	1500.4	7	93	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	PACFLT	832.1	6	93	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	LANFLT	1845.2	6	94	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	PACFLT	1221.1	6	94	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	LANFLT	2928.4	5	95	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	PACFLT	2917.0	6	95	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	LANFLT	2401.1	6	96	51.0	84.4	16.8	23000	166	2	2	3840	Helo

UH-46D	PACFLT	2290.6	7	96	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	LANFLT	2321.8	7	97	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	PACFLT	2576.4	6	97	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	LANFLT	2360.8	8	98	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UH-46D	PACFLT	2349.6	5	98	51.0	84.4	16.8	23000	166	2	2	3840	Helo
UP-3B	PACFLT	4442.1	2	94	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
UP-3B	PACFLT	5006.1	2	95	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
UP-3B	PACFLT	4461.0	2	96	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
UP-3B	PACFLT	4861.9	1	97	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
UP-3B	PACFLT	6863.8	1	98	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VH-1N	OTHERCOM	1175.2	6	87	48.2	57.3	14.1	11200	115	1	1	2110	Helo
VH-1N	OTHERCOM	1113.1	6	88	48.2	57.3	14.1	11200	115	1	1	2110	Helo
VH-1N	OTHERCOM	583.9	3	89	48.2	57.3	14.1	11200	115	1	1	2110	Helo
VH-3A	LANFLT	2378.2	4	87	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3A	LANFLT	1838.1	4	88	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3A	OTHERCOM	1194.8	1	88	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3A	LANFLT	2443.6	4	89	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3A	OTHERCOM	1617.5	1	89	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3A	LANFLT	1935.1	3	90	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3A	OTHERCOM	1156.3	1	90	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3A	LANFLT	3411.7	2	91	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3A	OTHERCOM	117.1	1	91	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3A	LANFLT	2498.2	3	92	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3A	LANFLT	1730.2	4	93	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3A	LANFLT	3250.4	4	94	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3A	LANFLT	1986.4	4	95	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3A	LANFLT	454.9	4	98	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3D	OTHERCOM	1652.5	11	87	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3D	OTHERCOM	2153.0	11	88	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3D	OTHERCOM	1953.0	11	89	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3D	OTHERCOM	21910.4	11	90	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3D	OTHERCOM	3509.2	11	91	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3D	OTHERCOM	2760.0	11	92	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3D	LANFLT	2862.3	10	93	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3D	LANFLT	3319.7	10	94	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3D	LANFLT	5272.8	10	95	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-3D	LANFLT	6051.3	10	98	62.0	72.8	16.1	21500	166	2	2	2984	Helo
VH-60A	OTHERCOM	425.7	1	88	53.8	64.1	17.0	21884	145	3	2	3660	Helo
VH-60A	OTHERCOM	445.6	6	89	53.8	64.1	17.0	21884	145	3	2	3660	Helo
VH-60A	OTHERCOM	1105.6	9	90	53.8	64.1	17.0	21884	145	3	2	3660	Helo
VH-60N	OTHERCOM	959.2	1	90	53.8	64.1	17.0	21884	145	3	2	3660	Helo
VH-60N	OTHERCOM	2116.6	9	92	53.8	64.1	17.0	21884	145	3	2	3660	Helo
VH-60N	LANFLT	1872.5	9	93	53.8	64.1	17.0	21884	145	3	2	3660	Helo
VH-60N	LANFLT	1091.8	8	94	53.8	64.1	17.0	21884	145	3	2	3660	Helo
VH-60N	LANFLT	2042.3	8	95	53.8	64.1	17.0	21884	145	3	2	3660	Helo
VH-60N	LANFLT	5015.4	8	98	53.8	64.1	17.0	21884	145	3	2	3660	Helo
VP-3A	LANFLT	4567.9	3	87	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	OTHERCOM	4928.9	1	87	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	PACFLT	2177.6	2	87	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	LANFLT	4981.4	2	88	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	OTHERCOM	4222.4	1	88	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	PACFLT	1407.0	2	88	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	LANFLT	4845.3	2	89	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	OTHERCOM	5934.2	1	89	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	PACFLT	1566.6	2	89	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	LANFLT	5969.1	3	90	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	PACFLT	1733.9	1	90	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	LANFLT	5458.9	3	91	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	PACFLT	1046.8	1	91	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	LANFLT	3418.3	3	92	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	OTHERCOM	5841.3	1	92	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	PACFLT	1922.7	1	92	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	LANFLT	2717.8	2	93	100.0	117.0	34.0	135000	473	10	4	15560	Cargo

VP-3A	OTHERCOM	11799.7	3	93	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	PACFLT	5019.4	1	93	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	LANFLT	2727.2	3	94	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	OTHERCOM	4120.7	1	94	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	PACFLT	1129.5	1	94	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	LANFLT	2862.2	3	95	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	OTHERCOM	4222.5	1	95	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	PACFLT	1754.1	1	95	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	LANFLT	2865.3	3	96	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	OTHERCOM	3843.3	1	96	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	PACFLT	1900.2	1	96	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	LANFLT	3078.2	3	97	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	OTHERCOM	3545.4	1	97	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	PACFLT	1928.2	1	97	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	LANFLT	3881.4	3	98	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	OTHERCOM	5201.3	1	98	100.0	117.0	34.0	135000	473	10	4	15560	Cargo
VP-3A	PACFLT	2421.3	1	98	100.0	117.0	34.0	135000	473	10	4	15560	Cargo

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF REFERENCES

1. Wu, Ming-Cheng, *Estimating Operating and Support Models for U.S. Air Force Aircraft*. Masters Thesis, Naval Postgraduate School, March 2000
2. Allison, William J., *A Cost Model for Estimating Operating and Support Costs for U.S. Navy (Nuclear) Submarines*, Masters Thesis, Naval Postgraduate School, June 2000
3. Brandt, James M., *A Parametric Cost Model for Estimating Operating and Support Costs of U.S. Navy (Non-Nuclear) Surface Ships*, Masters Thesis, Naval Postgraduate School, June 1999
4. McGinnis Terry, Captain, Commander of Combat Documentation Team in Kosovo, *Naval Aviation News*, Sep/Oct 1999 p.11
5. Scott, Robert, Robert Spiker, and Michael Thibault, *Parametric Cost Estimating Handbook*, Washington, DC, Department of Defense, 1995.
6. DoDI 5000.2-M *"Defense Acquisition Management Documentation and Reports*" dated February 23, 1991
7. DoDD 5000.4 "OSD Cost Analysis Group"
8. *Navy Visibility and Management of Operating and Support Costs, Volume II, Aircraft Data Type/Model/Size, Fiscal Year 1995,* Department of the Navy, Naval Center for Cost Analysis, June 1996
9. *Unmanned Spacecraft Cost Model*, SD-TR-81-45, Space Division, Comptroller, June 1981
10. *Jane's World Aircraft*, Jane's Publishing, Inc. New York, 1960-1999
11. http://www.history.navy.mil/planes
12. http://www.fas.org/man/dod-101/sys/ac/index.html
13. http://www.chinfo.navy.mil/navpalib/factfile/ffiletop.html
14. http://www.nawcad.navy.mil
15. Neter, John, William Wasserman and Michael H. Kutner *Applied Linear Statistical Models,* Richard D. Erwin, Inc., 1990
16. Microsoft Excel®, for Windows 2000, Microsoft Inc.
17. Jobson J.D., *Applied Multivariate Analysis Volume II: Categorical and Multivariate Methods,* Springer-Verlag New York, Inc., 1992
18. Hamilton, Lawrence C., *Regression with Graphics, A Second Course in Applied Statistics,* Wadsworth, Inc., 1992
19. S-PLUS 2000 for Windows Version NT, Copyright 1988-2000, MathSoft, Inc.

20. Devore, Jay L., *Probability and Statistics for Engineering and the Sciences Fourth Edition,* Brooks/Cole Publishing Company, 1995

21. Anderson, Timothy P, *OA4702 Course Text Book,* Naval Postgraduate School

22. Bryant, Knox W., *Analysis of Navy Delayed Entry Program and Recruit Training Center Attrition*, Masters Thesis, Naval Postgraduate School, June 1998

23. http://web.nps.navy.mil/opnsrsch

.

INITIAL DISTRIBUTION LIST

1. Defense Technical…..……………………………………..…………..………(2)
   Information Center 8725 John
   J. Kingman Rd., STE 0944
   Ft. Belvoir, Virginia 22060-6218

2. Dudley Knox Library…………………………………..…………..………(2)
   Naval Postgraduate School
   411 Dyer Rd
   Monterey, CA 93943-5101

3. Genelkurmay Baskanligi……….……………………………………………..…(1)
   Personel Baskanligi
   Bakanliklar
   Ankara, TURKEY

4. Kara Kuvvetleri Komutanligi…………..…………………………..……………(1)
   Personel Daire Baskanligi
   Bakanliklar
   Ankara, TURKEY

5. Kara Kuvvetleri Komutanligi…………..…………………………..……………(1)
   Kara Kuvvetleri Kutuphanesi
   Bakanliklar
   Ankara, TURKEY

6. Kara Harp Okulu Komutanligi……………………………………………..…(1)
   Cumhuriyet Sitesi
   Kara Harp Okulu Kutuphanesi
   Bakanliklar
   Ankara, TURKEY

7. K.K.K. Egitim ve Doktrin Komutanligi.……………………………………..…(1)
   Egitim ve Doktrin Komutanligi Kutuphanesi
   Balgat
   Ankara, TURKEY

8. LCDR Timothy P. Anderson……..……………………………………………..(2)
   Code OR/De
   Operations Research Department
   U.S. Naval Postgraduate School
   Monterey, CA 93943

9. Professor Samuel E. Buttrey…..…………………………………………………(1)
Code OR/De
Operations Research Department
U.S. Naval Postgraduate School
Monterey, CA 93943

10. Mustafa Donmez..…..…………………………………………………………(2)
Hurriyet Mah Manolya Gecidi No: 5/3
Melikgazi, Kayseri, TURKEY